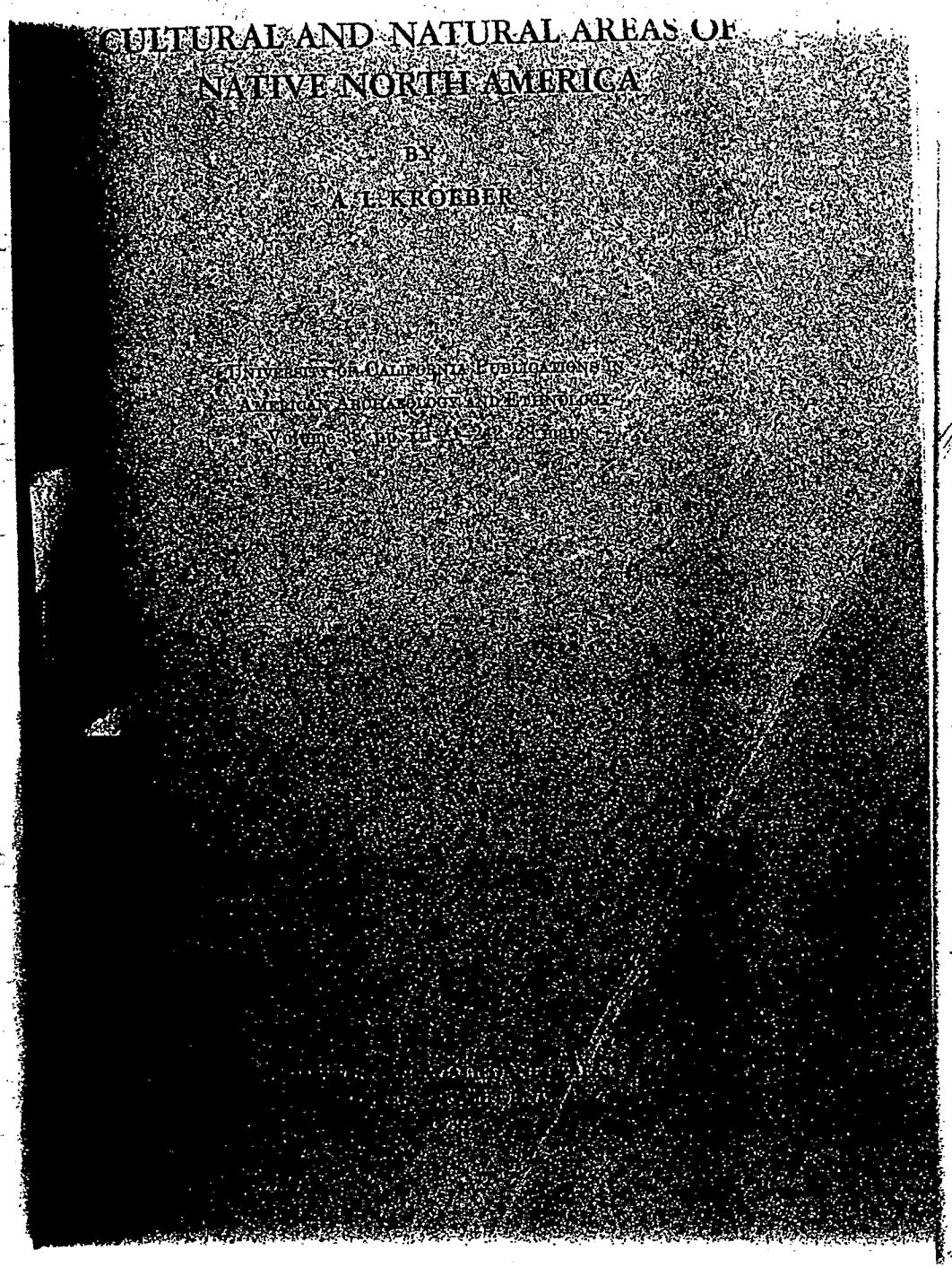

I. OBJECTIVES

THIS STUDY has two objectives. It aims, first, to review the environmental relations of the native cultures of North America. Its second purpose is to examine the historic relations of the culture areas, or geographical units of cultures.

Three points are best stated explicitly at the outset, to prevent possible misconception.

The first is that the present work in no sense represents a relapse toward the old environmentalism which believed it could find the causes of culture in environment. While it is true that cultures are rooted in nature, and can therefore never be completely understood except with reference to that piece of nature in which they occur, they are no more produced by that nature than a plant is produced or caused by the soil in which it is rooted. The immediate causes of cultural phenomena are other cultural phenomena. At any rate, no anthropologist can assume anything else as his specific working basis. But this does not prevent the recognition of relations between nature and culture, nor the importance of these relations to the full understanding of culture.

The second point is to guard against the possible misconception that the determination of culture areas is here considered an end in itself. The concept of a culture area is a means to an end. The end may be the understanding of culture processes as such, or of the historic events of culture.

The study of processes tends to be analytic, and therefore to disregard time and space relations except so far as they condition the particular phenomena whose processes are being examined. In proportion as the study advances and learns to deal more directly with cultural processes as such, the time and space relations become a sort of frame. They remain factors that for scientific purposes must be controlled, but this control becomes a limitation, almost an encumbrance. This type of study is akin to the dissecting technique of the laboratory, even though cultural anthropology has neither laboratory nor experiment. It is the method which has been carried farthest, in penetration and exactness, by Franz Boas. This method can use culture areas only to a limited extent, as a sort of preliminary; and its practitioners therefore esteem the concept as of only incidental utility.

On the contrary, the historic approach, remaining concerned with events as they occur in nature, always stresses the time aspects of phenomena as part of its ultimate objective. Ethnology, particularly when concerned with peoples which, like the native ones of America, have left few or no documentary records, perforce has recourse to spatial classifications such as culture areas. In themselves these yield only a momentary and static organization of knowledge, whereas the purpose of history is genetic. In proportion as the recog-

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nition of culture areas becomes an end in itself, it therefore defeats really historic understanding. The conception on which the present monograph is based is that space and time factors are sufficiently interrelated in culture history to make the culture area a valuable mechanism, rather than a distraction, in the penetration of the time perspective of the growth of cultures so relatively undocumented as are those of native America.

The third point to be kept in mind is that the present study deals with culture wholes, and not, except incidentally, with culture elements or "traits," nor with those associations of elements which are sometimes called "culture complexes" but which always constitute only a fraction of the entirety of any one culture. Culture wholes as a concept correspond in many ways to regional floras and faunas, which are accumulations of species but can also be viewed as summation entities.

The term "culture area" is employed because usage has established it. It is an unfortunate designation in that it puts emphasis on the area, whereas it is usually the cultural content that is being primarily considered. We mean a regionally individualized type or specific growth of culture when we say "culture area," much as a historian may use "the Eighteenth Century" as a short way of referring to the culture that was characteristic of eighteenth-century Europe. It would be well if there were a brief technical term for the naturally individualized growths of culture with which historical anthropology is more and more dealing. But it seems impossible to find an unambiguous term without coining it.[1] Evidently the general thought of our day is not yet sufficiently concerned with such growths of culture to feel the need of a designation for them.

[1] "Diaita" (Angl. diaeta) has been suggested to me by J. L. Myres as an etymologically adequate term to denote a culture whole or actually cohering culture mass, corresponding to the "biota" of biologists. It would be useful if adopted.

II. HISTORY OF CONCEPTS

Environment in Anthropology

For a generation American anthropologists have given less and less attention to environmental factors. In part this represents a healthy reaction against the older naïve view that culture could be "explained" or derived from the environment. For the rest, it is the result of a sharpening of specific anthropological method and the consequent clearer perception of culture forms, patterns, and processes as such: the recognition of the importance of diffusion, for instance, and of the nature of the association of culture elements into "complexes." Most attention came to be paid, accordingly, to those parts of culture which readily show self-sufficient forms: ceremonial, social organization, art, mythology; somewhat less to technology and material culture; still less to economics and politics, and problems of subsistence. Much of the anthropology practiced in this country in the present century has been virtually a sociology of native American culture; strictly historic and geographic interests have receded into the background, except where archaeological preoccupation kept them alive. We have had intensive studies of the internal social grouping of peoples of whom we did not know whether they constituted one or several national units; analyses of the patterns of maize- or acorn-utilization complexes, rather than consideration of whether such a complex provided a tenth, a half, or four-fifths of the subsistence of the various tribes who adhered to it; and so on. This diversion of attention to cultural forms was necessary and desirable; the attendant shift of interest away from historical and subsistence problems was probably inevitable. There is also often a readier productivity in work along the formal lines, especially among Indians on reservations. An old informant can sometimes give exact data on the sequence of details of a ritual that has been abandoned for forty years, but is vague about the proportion of acorns or salmon in his father's diet, or the months of each year spent by his group on the river or in the mountains. However, such facts are also of consequence in their relation to culture, since every culture is conditioned by its subsistence basis. The culminations of culture obviously rest on a certain degree of economic surplus, for instance. Such a surplus will not explain why the lines in a given art are curved instead of straight, or why a people derives the origin of mankind from below ground rather than from the sky. But it may help to explain why Haida art is esthetically richer than Kwakiutl, or Pueblo ritual more complex than Havasupai. And these are also legitimate problems; and strictly historical ones. We need not edge away from them because they involve qualitative judgments or a concern with culture wholes. Anthropology does not have to be exclusively analytic in order to be valid.

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The concept of the culture area has had a gradual, empirical, almost unconscious growth. It probably began, as Boas points out, with the classification of museum collections on natural geographical lines instead of evolutionistical schematic ones. By 1916, Sapir in his Time Perspective discussed culture areas as something in general use; in 1917, Wissler codified those of native America,—on the basis, largely, of current usage. There have been no serious modifications or criticisms of his scheme. But it is significant that Wissler does not develop his interpretation of the growth of American culture through use of the culture areas which he defines. He follows agriculture, the textile arts, architecture, and so on, one by one through the two continents; and it is the summation of these findings, essentially, that yields his picture of hemispheric history. The culture-area classification remains a nearly static one, and apart

There has been another method of geographical attack: consideration of the distribution of single culture elements or limited complexes. This is the method pursued with such eminent success by Nordenskiöld in South America. Nothing equally systematic has been attempted for North America. But on a more limited scale the method has been applied by the Danes to Eskimo culture, by Spier to the Havasupai and their neighbors, and by several students to mythological material, although these latter have applied it without primarily historical objective. Wissler has used the method abundantly in somewhat different form: for larger complexes, or for summary outlines, or in elaboration of the age-and-area principle. This method is analytic in the sense that it deals with detached parts of culture. But cultures occur in nature as wholes; and these wholes can never be entirely formulated through consideration of their elements. The culture-area concept does attempt to deal with such culture wholes.

Boas has attempted to limit the significance of culture areas by asserting that these areas do not coincide when they are formulated on the basis of different parts of culture: technology, social organization, ritual, art, music, myth, etc. This view must be doubted as contrary to the overwhelming run of the facts, though no doubt occasionally true. An unusually rich development in almost all these lines is normally found coincident in highly specialized and distinctive cultures, such as those of the Pueblos or North Pacific Coast Indians.[1] Navaho altar paintings may be the most developed in the Southwest, but Navaho culture is after all close to that of the Pueblos and in many ways obviously dependent on it. That at some points the pupil departs from the master or surpasses him does not invalidate the reality of a school or tradition. In general, the experience of Old World history is to the same effect.

As a matter of fact, the points in time and space at which historically known culture growths culminated usually show a virtual coincidence of florescence

[1] Negative developments in relatively rich cultures are an apparent exception which really confirms the situation depicted, because absences tend to be due to strong positive developments in allied directions: the shaman is lacking in Pueblo life because the priesthood is strong, Lower Colorado tribes use a minimum of ritual paraphernalia because of their extreme emphasis on dream experience, and so on.

in the several facets of culture: the peaks of empire, wealth, sculpture, drama, philosophy, science in fifth-century Athens, for instance. Augustan Rome is another classical example; so is sixteenth-century Spain. Among other scholars, Flinders Petrie has gone so far as to try to demonstrate a fixed order in which the respective peaks of each of these facets of culture are reached in any civilizational culmination.[2] This attempt must be regarded as somewhat forced into a scheme. But it does show clearly the correlation of the parts, their close relation or overlapping coincidence in time and space, whenever the culmination is strong. There is no reason to believe that the course of events was materially different in native America. For the Maya and Pueblos we have archaeological justification that it was similar.

The whole subject of cultural climax is evidently related to that of the culture area. Since ethnologists normally deal with relatively timeless data they have been cautious and slow to approach problems of time climax. They have, however, evolved a spatial substitute: the culture center, or district of greatest cultural productivity and richness. This obviously is the regional expression of a culmination whose temporal manifestation is the climax. As so often, Wissler has pioneered the way. He makes the point that the center is the integral thing about an area. The area may therefore be conceived and represented somewhat diagrammatically. Hence the straight lines and sharp angles on Wissler's culture-classification maps. No serious exception could be taken to these maps if the centers were decisively defined; but Wissler more often than not leaves them as indefinite as the areas. His Plains group comprises thirty-one tribes, of which eleven are the most typical; his Southeast centers among the Muskogians, Yuchi, and Cherokee, who occupied half of the total region. For the Mackenzie and Eastern Woodland areas, the localization of centers is attempted very half-heartedly. Wissler also makes but little more use of his culture centers than of his culture areas when he reconstructs the outline history of the hemisphere. In short, it is clear that he has perceived the significance of focal points of growth, resulting in culminations definable in spatial and presumably temporal terms; but his working out of these has remained summary and indefinite.

The weakest feature of any mapping of culture wholes is also the most conspicuous: the boundaries.[3] Where the influences from two culture climaxes or foci meet in equal strength is where a line must be drawn, if boundaries are to be indicated at all. Yet it is just there that differences often are slight. Two peoples classed as in separate areas yet adjoining each other along the interarea boundary almost inevitably have much in common. It is probable that they normally have more traits in common with each other than with the peoples at the focal points of their respective areas. This is almost certain to be so where the distance from the foci is great and the boundary is not accentuated by any strong physical barrier or abrupt natural change. But the same holds true of the faunal and floral areas used by naturalists. In short, what

[2] Discussed further in the final section of the present work.

[3] This is less true of complexes or associations than of wholes, and is not at all applicable to atomic culture elements which can be mapped in terms of presence or absence.

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boundaries really show is not so much clefts occurring in nature, as rela... extent and strength of influences emanating from foci. They represent so... thing comparable to political spheres of influence expressed by devices suita... for showing artificial political entities. It would be desirable, therefore, to c... struct cultural maps without boundary lines, on some system of shading... tint variation of color; but the mechanical difficulties are great. For the pr... ent, it seems necessary to use the old devices and leave it to the reader... translate what his eye sees into the dynamic aspects that are intended. Th... difficulty inheres in all attempts to express in static two-dimensional spa... terms, phenomena that have a sequential as well as a spatial aspect; a flow... well as a distribution.

Relation of Natural to Cultural Areas

We can accept Wissler's findings on the relation of culture areas to enviro... ment.[4] He concludes that environment does not produce a culture, but stabiliz... it. Because at many points the culture must be adapted to the environmen... the latter tends to hold it fast. Cultures therefore incline to change slowly on... they have fitted themselves to a setting, and to enter a new environment wi... more difficulty than to spread over the whole of the natural area in which the... form was worked out. If they do enter a new type of territory, they are subje... to change. Once fitted to an environment, they are likely to alter radically on... through some factor profoundly affecting subsistence, such as the introductio... of agriculture.

Beyond these sound general principles, however, Wissler does not go ver... far. In his American Indian he enumerates some suggestive rough correspond... ences between altitude contours and linguistic or culture groups.[5] His late... work, The Relation of Nature to Man in Aboriginal North America (1926)... is concerned with the spatial distribution of culture traits and complexes. Na... ture in the sense of the varying physical and organic environment does no... really enter into the argument, except in the last section of the last chapter... which points out, with a few examples, that ecological factors may be of im... portance, but does not pursue the subject to any intensive conclusions.

Wissler's ten North American culture areas really rest on the six "food" areas which he reviews at the beginning of his book on the American Indian... although the relation of the two classifications is not wholly exact and does not become very explicit. These subsistence areas seem to refer primarily to the basis of culture, but of course involve environment also, especially its eco... logical aspects.

Some years before, Otis T. Mason had dealt directly though summarily wit... the environment of cultures, in the Handbook of American Indians. His twelve "ethnic environments" are defined in both geographical and cultural terms... and the environments are largely faunal and floral, that is, ecological. This stimulating essay has attracted little attention, in spite of its obvious sound...

[4] The American Indian (1922 ed.), 372–374.

[5] The same, 368–369.

...s of classification.[6] Mason's areas partly coincide with Wissler's, as the following comparison shows:

Wissler Food areas	Wissler Culture areas	Mason Ethnic environments
Caribou	Eskimo	Arctic
	Mackenzie	Yukon-Mackenzie
	(Northern part of Eastern Woodland)	St. Lawrence-Lakes
Bison	Plains	Plains
Salmon	North Pacific Coast	North Pacific Coast
	Plateau	Columbia-Fraser*
Wild Seeds	California	Interior Basin
		California-Oregon
Eastern Maize	Eastern Woodland (southern part)	Atlantic Slope
		Mississippi Valley†
	Southeastern	Gulf Coast
Intensive Agriculture	Southwestern	Pueblo
	"Nahua"	(Not dealt with)

* Assigned to Wild Seed food area, largely to Plains culture area, by Wissler.
† Divided by Wissler between the Plains and Eastern Woodland culture areas.

Ratzel concludes the second volume of his Anthropogeographie with a world map in which native North America is divided into four areas[7] corresponding rather closely to the primary culture areas laid down in the present work. They are, however, only briefly discussed.[8] Ratzel clearly knew much ethnography, had thought about it, and possessed definite ethnographical insight. But in the modern view his work is deficient in not sufficiently separating population and culture. Somatological, populational, and cultural aspects are only partly differentiated by him. Hence he evolved a clear concept of marginal peoples without advancing to that of marginal cultures, which Sophus Müller grasped concretely in dealing with the prehistory of Europe some years later. Ratzel, in short, remained primarily a geographer. But he did conceive of culture as more than an incidental epiphenomenon, and was far from being the crass environmentalist which Semple's misrepresentatively selective adaptation makes him out to be.

Environmental factors have not been wholly neglected in monographic studies in the North American field; but treatments have either been introductory, or, like Jenks's Wild Rice Gatherers, concerned with special manifestations. There seem to be no general classifications besides those reviewed.

[6] In an earlier work, Influence of Environment upon Human Industries or Arts, SI–AR 1895:639–665, 1896, Mason recognizes eighteen "environments" or "culture areas" as he indiscriminately calls them (pp. 646, 651), in the western hemisphere: Arctic (Eskimo); Athapascan (Yukon-Mackenzie); Algonquin-Iroquois; Muskhogean; Plains of the Great West; North Pacific Coast; Columbia Drainage; Interior Basin; California-Oregon; Pueblo; Middle American; Antillean (including southern Florida and part of the northern coast of South America); South American Cordilleran (Colombia to Peru); Andean Atlantic Slope (Colombia to Bolivia); Eastern Brazilian (from Tocantins east); Central Brazilian (Matto Grosso, between Araguaya and the western boundary of Brazil); Argentinian-Patagonian; Fuegian.

[7] Hyperborean, Northwestern, Northeastern, Civilized Peoples of Middle America.

[8] Anthropogeographie, 2:775–779, 1891.

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III. TRIBAL AREAS

NEARLY FIFTY YEARS AGO, Powell published his classification and map of
dian linguistic families north of Mexico, and this has been reissued with m
corrections by the Bureau of American Ethnology. Thomas and Swanton
lowed with a similar map of Mexico and Central America. So far as ma
speech groups are concerned, the continent has accordingly long been plo
with considerable accuracy. Not so, a tribal map. There have been many
tional ones; but the first continental one was that of Wissler in 1917. Th
however, gave no boundaries, and the apparent area attributed to any gr
was sometimes a function of the number of letters in its name rather than
its actual geographical holdings. The latter difficulty was partly remedied
a small map, based mainly on Wissler's, issued in 1919 by the University
California, in which a number near the center of each tribal range cor
sponded to the name as given in a key list. There were also added some tri
not included by Wissler. However, no boundaries of tribal areas were sho
and the tribes represented were only those most frequently cited in rec
ethnological literature.[1]

Evidently, maps as loosely defined as these offer little opportunity for ex
comparison of tribal and cultural areas with environmental ones. The on
recourse was to compile a tribal boundary map; which herewith appears
map 1. It makes no pretense of original research or of finality. It has
volved many judgments between differing delimitations. It follows at eve
point some one of the authorities listed, except where irreconcilable conflic
have had to be more or less arbitrarily compromised, and weight has th
been given to natural features; for instance, watersheds rather than strea
have generally been postulated as boundaries whenever a departure from th
sources was forced.[2]

The map does not, as it should in principle, represent conditions at one a
solute date nor even at one relatively consistent historic moment, such as th
of discovery. It attempts to indicate tribal territories approximately as th
were constituted at the time of first occupation by Europeans. This time vari
from the early sixteenth to the early nineteenth century in North Americ
It is this variation as well as conflict of authority that has forced the co
promises mentioned. A map dated for the period of discovery would be inco

[1] The Department of Anthropology of Yale University has recently (in 1938 ?) p
pared and manifolded, apparently in connection with its "cross-cultural" program
tribal map showing boundaries as well as names. This, then, is the first map of the ki
to be issued. The size is adequate—16 inches high; drainage is not shown; nor the are
south of Tehuantepec.

[2] The territorial relations of the Bannock and Shoshone, in which Mooney has main
been followed, are almost certainly wrong. The Lemhi are Shoshone, not Bannock in spee
I suspect either that the "Shoshone" and Wind River Shoshone held a fringe of territo
along the Rockies and Bitterroots which included the Lemhi; or that the Bannock had a
the upper Snake, virtually cutting the Lemhi off from the "Shoshone" and the "Shoshon
from the Western Shoshone, the "Shoshone" and Wind River Shoshone being one people. I
addition to other inconsistencies, the relation of the ethnic distribution on the map to th
drainage seems unlikely to be true; but I do not know how to make correction.

This and related problems are clearing up, owing to recent field studies by Steward an
others. See the supplemental bibliography in this section (p. 11).

plete in many areas, or filled with doubtfully identifiable names. Besides, this
plan would be subject to much the same variability of time represented as the
plan actually followed. Most of the maps used as sources because they show
boundaries refer to the period of occupation rather than to that of discovery.
The situation is not wholly fortunate; but the method followed seems the most
feasible and useful.

Below are given the sources used in the preparation of the map, a list of
some of the more important synonyms not appearing on the map, and memo-
randa on pronunciation. Tribal names abbreviated on the map appear in full
in its margin.

LIST OF WORKS USED FOR THE TRIBAL MAP (MAP 1)

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STEWART, OMER C.
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TRIBAL SYNONYMS

Akansea, Arkansas = Quapaw
Bungi = Plains Ojibwa (part)
Cáhita = Yaqui, Mayo, Tehueco, etc.
Cajuenche = Kohuana
Carrizo = Comecrudo
Cayuse = Wailatpu
Central Wintun = Wintun
Chippewa = Ojibwa
Chontal = Tequistlatec (or Mayan)
Chuj = Mame (part)
Etago-tine = Daho-tine
Etchimin = Malecite
Gros Ventre = Atsina
Halkomelem = Cowichan and Lower Fraser
Hareskin = Hare
Hasinai = Caddo (part)
Iglumiut = Tahagmiut
Iroquois = Seneca, Cayuga, Onondaga, Oneida, Mohawk
Irritila = Lagunero
Jacaltec = Mame (part)
Kawchodinne = Hare
Kinipetu = Caribou Eskimo
Koso = Panamint
Laimon = Cochimí (part)
Loucheux = Kutchin tribes
Mangue = Chorotega
Mascouten = Prairie Potawatomi
Meskwakwi = Fox
Middle Columbia Salish = Sinkiuse (and Wenatchi)
Minitari = Hidatsa

TRIBAL SYNONYMS—(*Continued*)

Mohave-Apache = Yavapai
Mohegan = Pequot (part)
Nahane = Tahltan, Taku-tine, Kaska, Abbato-tine, Etchao-tine, Daho-tine
Nestucca = Siletz
Niantic = Narraganset (part)
Nishinan = Southern Maidu
Northern Diegueño = Western Diegueño
Northern Shoshone = Lemhi
Northern Wintun = Wintu
Ntlakyapamuk = Thompson
Paipai = Akwa'ala
Paviotso = Northern Paiute
Peau de Lièvre = Hare
Pinto = Pakawa
Pison = Janambre
Quicama, Quiquima = Halyikwamai
Ree = Arikara
Sahaptin = Nez Percé
Salish = Flathead
Saulteaux = Ojibwa (western part)
Seminole = late Creek offshoot
Siciatl = Seshelt
Sioux = Dakota
Snake = Shoshone (and Bannock?)
Songish = Lkungen
Southern Diegueño = Eastern Diegueño
Southern Wintun = Patwin
Stlatliumq = Lillooet
Susquehanna = Conestoga
Takulli = Carrier
Taratin = Abnaki
Tlingcha-tine = Dogrib
Tobacco Nation = Tionontati
Tojolabal = Chañabal
Uspantec = Ixil (part)
Warm Springs = Tenino, etc.
Westo = Yuchi
Wishosk = Wiyot
Wyandot = Huron
Xuala = Sara
Yopi = Tlapanec
Yukaliwa = Kiliwa

PRONUNCIATION OF TRIBAL NAMES

Vowels in tribal names have their approximate Continental values, consonants the Engli ones. In Latin America, Spanish orthography has been retained. The principal exception follow.

a has the value of e: Ojibwa, Iowa, Salish, Waco, Nehalim, Chehalis
ai, ay = e: Nottoway, Yanktonai, Kootenay
au, aw = o (originally a or a^u): Quapaw, Pawnee, Choctaw, Chickasaw, Shawnee, Mohawk Siuslaw, Sauk, Nauset, Eufaula
ee = i: Cree, Creek, Cherokee, Pawnee, Shawnee, Wateree, Pedee, Santee, Congaree, Sewee Coree, Occaneechi, Oconee, Chattahoochee, Okfuskee
e silent: Seminole, Mobile, Nanticoke, Osage, Spokane, Sinkiuse
eu = yu: Eufaula
i = ai: Iowa, Kiowa, Siuslaw, Tenino
oo = u: Tillamook, Chinook, Kootenay, Lillooet, Bella Coola, Kickapoo, Yazoo
ou = u: Missouri
ow = au: Powhatan, Cowlitz, Methow, Cowichan
y = ai: Chipewyan
ch = sh: Cheyenne, Chasta Costa
x = sh: Mixe, and others in Spanish orthography
x = ks: Comox

Accented on first syllable: Navaho, Papago, Opata, Cahita; also, in English, Otomi Zapotec, Totonac, etc.

IV. VEGETATION AREAS

Of the various geographical and environmental classifications which might be compared with the native cultural classifications, those dealing with vegetation perhaps prove on the whole the most useful. This is expectable, since culture, through houses and fire, enables even the most backward peoples to work out a residence adjustment in almost any climate or terrain, but does not make possible nearly so decisive a control, even through agriculture, of the general vegetation on which, directly or indirectly, most subsistence is based.

Wissler has pointed out several ethnic correspondences to altitude, as already mentioned; but on the one hand these are of language groups rather than of cultures, and on the other it seems doubtful whether it is the altitudes as such or their respective climates and plant covers that constitute the conditioning factors of the human grouping. Where Wissler has gone farther, as in his Tundra, Mesa, and Jungle division, the classification is too summary to be useful. The culture of his American Mesa, to consider just one example, reached its highest culmination among the Maya proper, whose older as well as newer seats were in the tropical forest.

The strongest case for relation of climate and culture could expectably be made with a classification taking into consideration all or several important elements of climate, such as Köppen's, which is based on temperature, precipitation, and seasonal change. Unfortunately, no detailed classification of North American climates on Köppen's principles is yet available. The limited maps (nos. 13, 24–27) which have been compiled on this plan are briefly considered below in Section XIII, on "Relations of Environmental and Cultural Factors."

Of classifications of the organic environment, the earliest to be developed for North America, the one most intensively mapped, and the one still most influential in geographical studies of faunas and floras is C. Hart Merriam's grouping into "life zones."[1] These zones are in theory empirical, but avowedly depend on temperature—not mean annual isotherms, but cumulative heat[2]—as determinative of physiological activity in plants and reproductive activity in animals. They run, therefore, generally from east to west, with marked swings and convolutions where altitude or other temperature factors are involved. Theoretically, temperature seems too simple a determinant for culture; and a glance at Merriam's map of the United States suffices to show that the life zones have practically no correlation with recognized cultural areas. As a matter of fact, Merriam distinguishes an eastern and a western area, separated approximately by the hundredth meridian, within his life-zone scheme. These two areas obviously differ considerably in both average altitude and precipita-

[1] See "Authorities Used," below; also Nat. Geogr. Mag., 6:229–238, 1894.

[2] Normal mean daily heat above 0° C. (6° C. in theory) added up in degrees for the year. This is taken to give the northern limit of species and the life zones based upon them. The southward range of northern species is assumed to conform to the mean temperature of the six hottest consecutive weeks of summer. The life zones conform in general to the first of these two climatic factors, except on most of the Pacific coast of the United States, where cool summers are accompanied by a more northerly flora and fauna than the temperature summations determine elsewhere.

tion. The fact, however, that the zones are run across them shows that t
intent is to accord primacy to temperature.

A number of areal classifications of North American natural vegetation ha
been attempted in the past ten to twenty years. The approach has been som
what variable. Harshberger's work, for instance, has been phytogeograph
and is characterized by long species lists. Shelford's is ecological and region
with fauna considered as well as flora. Shantz and Zon attempt to define a
map characteristic and prevalent plant covers: a few typical species rath
than the totality represented are taken as determinants. Livingston and Shre
base their work on a classification similar to the last named, but use it for o
jectives that are physiological and etiological. Nevertheless, the major findin
of these and other authors are on the whole fairly concordant; and here, the
we would seem to have something detailed with which the classification o
native cultures may profitably be compared.

There are several reasons why plant areas should be of special importan
in a consideration of culture variations. First of all, they necessarily reflec
climate in its totality pretty well, besides accounting for soil influences. Se
ondly, they underlie fauna, and therefore provide the whole subsistence se
ting of nonagricultural and nonmaritime peoples; while even agriculture mus
find itself limited by the conditions which express themselves in natural area
of plant cover. Thirdly, the vegetation areas are, like culture areas, strictl
empirical, and not devised according to any preconceived scheme of the pr
macy of this or that factor.

The plan here followed in the consideration of North American vegetatio
types is this: The principal areal classifications have been brought togethe
on a series of maps (2–5), drawn to a scale uniform with that used in the tribal
cultural, and physiographic maps (1, 6, 7), and reproduced on transparen
paper to allow of superimposition for comparison. In the consideration of cul
ture that follows, such reference as seems appropriate is made to the vegetation
of each area. In Section XIII, on environmental factors, some of the mor
prominent correspondences between vegetation and culture are summarized.

AUTHORITIES USED FOR THE VEGETATION MAPS (MAPS 2–5)

Dominion of Canada
1930. Map Indicating Vegetation and Forest Cover, 100 Miles to 1 Inch. Department of the Interior, National Development Bureau, F. C. C. Lynch, Director, 1930. (Present map 4.)

Harshberger, J. W.
1911. Phytogeographical Survey of North America. (Engler and Drude, Die Vegetation der Erde, 13.) (Present map 2.)

Kellogg, R. S.
1910. The Forests of Alaska. U. S. Dept. Agr., Forest Service, Bull. no. 81. (Map from Professional Paper no. 45, U. S. Geol. Survey.) (Present map 5.)

Livingston, B. E., and Shreve, F.
1921. The Distribution of Vegetation in the United States, as Related to Climatic Conditions. Carnegie Institution of Washington. (Present map 5.)

Malte, M. O.
1922. The Flora of Canada. Canada Year Book [for] 1921, pp. 73–81. (Present map 5.)

[illegible], C. H.
1[illegible]. Life Zones and Crop Zones. U. S. Dept. Agr., Biol. Surv., Bull. no. 10. (The map is reproduced in Livingston and Shreve.)

[illegible], E. M.
1[illegible]. The Natural Regions of Mexico. Geogr. Rev., 11:212–226. (The map is reproduced in Shelford, fig. 13, p. 576.) (Present map 5.)

[illegible], H. L., and Zon, R.
1[illegible]. The Natural Vegetation of the United States. U. S. Dept. Agr., Bur. Agr. Econ., Atlas of Am. Agr., Pt. I, The Physical Basis of Agr., Sec. E, Natural Vegetation. (Present map 4.)

Shelford, V. E.
1926. Naturalist's Guide to the Americas. ("Prepared by the Committee on the Preservation of Natural Conditions of the Ecological Society of America, with assistance from numerous organizations and individuals, assembled and edited by the chairman, Victor E. Shelford." Mr. Shelford has been good enough to provide me with blueprints of the original full-size drawings from which his small maps, figs. 3, 4, and 5, had been engraved. These blueprints have served for the preparation of my map 3, which is therefore more accurate than it would have been if based on the published reductions. This courtesy is gratefully acknowledged.) (Present map 3.)

[illegible], F.
1917. A Map of the Vegetation of the United States. Geogr. Rev., 3:119–125. (The map is larger than that in Livingston and Shreve, which is credited to Shreve in that work; but otherwise they appear to be identical.)

These sources aggregate four for the United States and Canada, three each for Mexico and Alaska, and two for Central America. In spite of some differences of objective and method among the several authors, their findings agree nearly enough to make the compilation of a generalized map feasible with no very great difficulty. I have been tempted to make such a combination, but the work should properly be done by a botanist.

The tinting or shading of the original maps has had to be omitted, and key numbers have been substituted. These numbers have been assigned according to a general scheme, so that the same number denotes the most nearly corresponding areas of the different authors. The authors' own terms have, however, been retained for their areas. The concordance or uniformized key list of areal designations follows.

Concordance Areas

TABLE 1

Concordance Key of Vegetation Areas Reproduced in Maps 2–5

Dom, Dominion of Canada (map 4); Ha, Harshberger (map 2); K, Kellogg (map 5); **Shr**, Shreve (map 5); Ma, Malte (map 5); San, Sanders (map 5); Shl, Shelford (map 3); **Sha**, Shantz and Zon (map 4).

1. Tundra

1. *Tundra.* Ha, Shl: 1, Tundra. Ma: 1, Arctic. K: 1, Tundra, and 1a, Area above Timber. **Dom**: 1, Treeless Plains and Mountains above Timber Line.

2–7. Desert

2. *Salt Desert.* Sha: 2, G, Greasewood, Salt Desert Shrub.

3. *Desert.* Ha: part of 4a, Sonoran Desert. Shl: 3a, Desert, 3b, Extreme Desert. Shr: 3, California Microphyll Desert. Sha: part of 5, CB, Creosote Bush, Southern Desert Shrub. **San**: 3-4, Desert, including Alkaline Wastes.

4. *Succulent Desert.* Ha: 4a, Sonoran, and 5a, Chihuahuan Desert. Shl: 4, Succulent De… Shr: 4c, Arizona, 4d, Texas Succulent Desert. Sha: part of 5, CB, Creosote Bush, Sou… Desert Shrub. San: 3-4, Desert; see also 17a.

5. *Creosote Bush Desert.* Ha: part of 4a, Sonoran Desert. Shr: 3, California Microp… and 4c and 4d, Arizona and Texas Succulent Deserts. Sha: 5 (=3-4), CB, Creosote Bu… Southern Desert Shrub.

6. *Sagebrush-Juniper Semidesert.* Ha: 6, Great Basin. Shl: 3a, Desert; 6a, Small-… Semi-Desert. Shr: 6, Great Basin Microphyll Desert and part of Western Xerophytic F… green Forest (remainder appearing on map 5 as 20x); 6a, Texas Semi-Desert. Sha: 6, S… Sagebrush, Northern Desert Shrub, and part of J, Piñon-Juniper, Southwestern Conifer… Woodland (remainder appearing on map 4 as 20x). Dom: 6-11-20; see 20.

7. *Chaparral Semidesert.* Shl: 7, Broad-leafed Evergreen Semi-Desert, Region of Win… Rains. Shr: 7, Pacific Semi-Desert. Sha: 7, C, Chaparral, Southwestern Broad-lea… Woodland.

8–13. Grassland

8. *Swamp Grass.* Shl: 8, Grass Swamp. Shr: part of 8–26, Swamps and Marshes. Sha: … MG, Marsh Grassland.

9. *Tall Grass.* Ha: included in 9-10, Prairie-Great Plains. Shl: included in 9-10, Mo… Grassland, or Temperate Steppe. Shr: included in 9-10, Grassland. Sha: 9, TG, Tall Gra… Prairie Grassland. Ma: 9, Second Prairie Steppe.

10. *Short Grass.* Ha, Shl, Shr: part of 9-10. Sha: 10, SG, Short Grass, Plains Grassland… Ma: 10, Third Prairie Steppe. Dom: Prairie, Short Grass.

11. *Bunch Grass.* Ha: 11, San Joaquin district. Sha: 11, BG, Bunch Grass, Pacific Gra… land. Ma: 11, Dry Belts (of British Columbia). Dom: 6-11-20; see 20.

12. *Desert Grass.* Shl: 12, Dry Grassland, or Semi-Desert Grassland (Bush Steppe). Shr… 12, Desert-Grassland Transition. Sha: 12, DG, Mesquite Grass, Desert Grassland. San: 12… Short Grass.

13. *Alpine Grass.* Sha: 13, A, Alpine Meadow, Alpine Grassland. Shr: see 24.

14–17. Parkland and Savanna

14. *Poplar Parkland.* Shl: 14, Poplar Savanna. Ma: 14, First Prairie Steppe. Dom: Gro… Belt (mostly poplar in prairie).

15. *Oak Parkland.* Ha: 15a, Transition Prairie-Forest, Oak Openings, and 15b, Texa… Cross Timber and Coast Plain Belt, with Live Oaks and Prairies, and part of 29b, Ozark… and 29c, Edwards Plateau Forest. Shl: 15, Oak Savanna. Shr: 15, Grassland-Deciduou… Forest Transition. San: 15-30, Deciduous Trees, chiefly Oak.

16. *Moist Savanna.* Ha: various. Shl: 16, Moist Savanna, not distinguished by symbo… from 15. San: see 15-30.

17. *Dry Savanna.* Shl: 17, Arid Tree or Bush Savanna. Sha: 17, DS, Desert Savanna… Mesquite and Desert Grass Savanna. San: 17a, Scrub, chiefly Mesquite, Yucca, Agave… Cactus.

18–24. Coniferous Forest

18. *Northern Coniferous Forest.* Ha: 18, Subarctic (Hudsonian), Northern Coniferou… Forest. Shl: 18, Northern, or Moist, Coniferous Forest. Shr: 18, Northern Mesophytic Ever… green Forest; (20w, below, is also included by Shr in 18). Sha: 18, S, Spruce-Fir, Northern… Coniferous Forest, and 18b, JP, Jack, Red, and White Pines, Northeastern Pine Forest… Ma: 18, Sub-Arctic. Dom: 18, Sub-Arctic Forest, and 18-20, Northwestern Coniferou… Forest. K: 18, Timbered, 18a, Sparsely Timbered; (see also 1a, Above Timber; and 21).

19. *Northeastern Coniferous Forest (with deciduous admixture).* Ha: 19, St. Lawrence… Great Lakes. Shl: see 25. Shr: part of 18. Sha: part of 18 (S), 18b (JP), and 25 (BM).

19. Hardwood Forest. Dom: 19c, Eastern Coniferous Forest, and 19m, Mixed Forest, … **Cleared Portions** of Eastern Forest Belts.[3]

20. *Western Mountain Coniferous (Pine) Forest.* Ha: 20, Rocky Mountain; 20e, Sierra … **and 20f,** San Bernardino; 20g, Santa Lucia area of California Coast Range; 20h, … **Sierra Madre.** Shl: 20, Desert, or Mountain, Coniferous Forest. Shr: 20, Western … **Evergreen Forest** (mostly merged in map 5 in areas 6, 3, 4c, 12, 9-10, 4d); 20w … **is treated by** Shr as part of 18, Northern Mesophytic Evergreen Forest. Sha: … **5) is treated by** Shr as part of 18, Northern Mesophytic Evergreen Forest. Sha: … **Yellow Pine-Douglas Fir,** 20b, LP, Lodgepole Pine, and 20c, SP, Yellow Pine-Sugar … **three constituting** the Yellow Pine-Douglas Fir area of Western Pine Forest; also … **WP, Western** Larch-Western White Pine, part of Cedar-Hemlock or Northwestern … **Forest;** also 20x, Piñon-Juniper, Southwestern Coniferous Woodland (partly … **in map 4, in areas** 5, 6, 12, 10). San: 20h–23, Pine Forest. Ma: 20, Rocky Mountains, … **Selkirk Mountains** (see 21s). Dom: 6-11-20, Semi-open Coniferous Forest of South- … **Interior British** Columbia (sagebrush, bunch grass, yellow pine, Douglas fir, according … **elevation);** 18–20, Northwestern Coniferous Forest (see 18).

21. *Northwestern Coniferous Forest.* Ha: 21a, Sitkan, and 21b, Columbian; and 21c, … **area of** California Coast Range district (=20g and 21c). Shl: Northwestern … **Forest.** Shr: 21, Northwestern Hygrophytic Evergreen Forest. Sha: 21, DF, … **Douglas Fir,** and 21c, R, Redwood, constituting Cedar-Hemlock or Northwestern … **Forest** (in which Sha also includes 20d, WP, here reckoned under 20). Ma: 21, … **Mountains.** Dom: 21, Western Coniferous Forest, Coastal, and 21s, Western Conif- … **Forest of** Interior Wet Belts of British Columbia (=Ma: 20d). K: 21, Timbered … **distinguished from** 18 by K; the broken line in map 5 has been added).

22. *Southeastern Coniferous (Pine) Forest.* Ha: 22, Atlantic-Gulf Coastal, with Pine … **Strand** vegetation. Shl: 22, Southeastern Coniferous Forest; and 22a (=26b), Flat- … **Shr: 22,** Southeastern Mesophytic Evergreen Forest. Sha: 22, LLP, Longleaf- … **Pines,** Southeastern Pine Forest.

23. *Arid Coniferous (Pine) Forest.* Ha: 23a, Eastern Sierra Madre, and 23b, United … **Shl: 23,** Arid Coniferous Forest. San: 20h-23, Pine Forest.

24. *Alpine Coniferous Forest.* Shl: 24, Sub-Alpine Evergreen Forest, and 24a, High Moun- … **Forest. Shr:** 24, Alpine Summits (see 13).

25. Coniferous-Deciduous Forest

25. *Northeastern Mixed Forest.* (Ha: see 19). Shl: 25, Mixed Coniferous and Deciduous … **Shr:** 25, Northeastern Evergreen-Deciduous Transition Forest. Sha: 25, BM, Birch- … **Maple-Hemlock,** Northeastern Hardwoods. Ma: 25, Carolinean. Dom: 25, Southern … **Forest** (includes southern strip of Dom: 19m).

Southeastern Mixed Forest. See 28, Piedmont Deciduous Forest.

26–32. Deciduous Forest

26. *Swamp Forest.* Shl: 26, Cypress Swamp, or Tree Swamp, and (26b=) 22a, Flatwoods … **forest** interspersed with cypress swamp), and 26c, Magnolia Hammock (higher por-

[3] Area 19m of my map 4 is represented by two differently colored areas on the Dominion … map, "Mixed Forest" and "Cleared Portions of Eastern Forest Belts, Including the Hard- … wood Forests of Southern Ontario and Southern Quebec." So the legend in the key. The … legend on the map itself reads "Cleared Portions of Hardwood Forest." The color, however, … is continued to the very mouth of the St. Lawrence, into New Brunswick and Nova Scotia, … and in patches north into the Coniferous Forest as far as 49°, all of which are well beyond … the limits of any hardwood forest. The species listed in the key legend for "Cleared Por- … tions" also are nearly the same as the species characterizing the "Mixed Forest." It is … therefore evident that while the "Cleared Portions" represent clearing and not any one ex- … clusive type of native vegetation, the great preponderance of the area was natively in "Mixed … Forest"; and the whole of it has been so designated, except for the patches wholly within … Coniferous Forest. A strip along the St. Lawrence and Lake Ontario was undoubtedly Hard- … wood, connecting with the area designated as Hardwood on the north side of Lake Erie; … but there is no way of demarking it from the major Mixed Forest portion of 19m, except … by reference to the maps of Malte and other authorities.

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tions of Tupelo low hammock). Shr: part of 8-26, Swamps and Marshes. Sha:
Cypress-Tupelo-Red Gum, River Bottom Forest, and 26a, M, Mangrove, Subtropical

27. *Appalachian Deciduous Forest.* Ha: 27, Appalachian Mountain Deciduous
Shl: included in 27-28-29, Temperate Deciduous Forest. Shr: included in 27-29, De
Forest. Sha: 27, OC, Chestnut-Chestnut Oak-Yellow Poplar, part of Southern Ha
Forest (=27-28-29).

28. *Piedmont Deciduous Forest (with coniferous admixture).* Ha: 28, Piedmo
included in 27-28-29, Temperate Deciduous Forest. Shr: 28, Southeastern Ever
Deciduous Transition Forest. Sha: 28, OP, Oak-Pine, part of Southern Hardwood
(27-28-29).

29. *Mississippi Valley Deciduous Forest.* Ha: 29a, Lacustrine and Kentucky-Ten
areas, and 29b, Ozark area, of Alleghanian-Ozark district, and part of 29c, Edwards P
Forest. Shl: included in 27-28-29, Temperate Deciduous Forest. See also 26c. Shr: inc
in 27-29, Deciduous Forest. Sha: 29, OH, Oak-Hickory, part of Southern Hardwood
(=27-28-29).

30. *Arid Deciduous Forest.* Ha: 30c, Jaliscan. Shl: 30a, Arid Deciduous Forest, and
Deciduous Thorn Forest. San: 15-30, Deciduous Trees, chiefly Oak.

31. *Tropical Rain-forest Subclimax.* Ha: 31c, Gulf Mexican. Shl: 31a, Montane or
Forest, and 31b, Drier Tropical Rain Forest. San: 31d, Jungle.

32. *Tropical Rain-forest Climax.* Ha: 32c, Floridian and Insular areas of Bahama
gion; 32d, Antillean region; 32e, Guatemalan region, Central American province;
Costa Rican region, South American province. Shl: 32a, Luxuriant Tropical Rain Fo
and 32b, Tropical Rain Forest Climax. San: 32, Tropical Rain Forest.

This concordance key together with maps 2–5 seems to go as far as is pro
for a nonbotanist in blocking out the major vegetation areas on which ecol
cal botanists are in substantial agreement, without attempting to decide u
the respective merits of their bases of classification or the relative accuracy
their areal limitations. At any rate, it provides something against which ar
classifications of culture can be compared with reasonable approximation.

The areal limits of the originals have been altered in maps 4 and 5 for c
tain simplifications, which are here enumerated. These simplifications h
been enforced by the nonuse of color, without which many of the minute
irregularly narrow areas, especially of the Shantz-Zon atlas, cannot be rep
duced with effectiveness to the eye.

Numerous long tongues of deciduous forest Oak-Hickory bottom lands (29) extend
up the western affluents of the Mississippi, and of southeastern River-bottom Forest (2
omitted or shortened.

Small areas or narrow fringes of Alpine Meadow (13), Tall Grass (9), Marsh Grass
Salt Desert or Greasewood (2): omitted.

Small high-altitude patches of Eastern Spruce-Fir (18) enclosed in areas of Northeas
Hardwood Forest (25) in the Appalachian ranges: omitted.

Western Spruce-Fir has throughout been merged in the Douglas Fir (21) or Wes
Pine (21a, b, c, d) areas in which it is enclosed or to which it is marginal.

On both maps 4 and 5 the western Piñon-Juniper areas of Shreve (Western Xeroph
Evergreen Forest) and Shantz-Zon (Southwestern Coniferous Woodland) have been so
what summarily simplified. It is clear that this plant cover represents in the main a cont
vegetation between the pine forests of higher altitudes and the desert shrub and grassla
of lower levels. Particularly evident is its association with sagebrush, from which it ris
islandlike or marginally as a function of increased altitude or slope, and therefore in num
ous patches and irregular fringes. In both maps 4 and 5 the plan has therefore been f

ved of converting Piñon-Juniper outright into Sagebrush (Great Basin Microphyll Desert,
) wherever the original maps show the two in contact. Similarly, it has been merged with
Creosote Bush (5), Desert Grass (12), and Short Grass (10) of Shantz-Zon; and the Cali-
rnia Microphyll Desert (3), Arizona Succulent Desert (4c), Desert-Grassland Transition
(8), Grassland (9–10), and Texas Succulent Desert (4d) of Shreve.[4] This leaves as Western
Xerophytic Evergreen Forest (20) of Shreve only a compact area in southern Texas, and
the Southwestern Coniferous Woodland (20x) of Shantz-Zon a fringe bordering the Yellow
Pine (20a) mountain areas of northwestern and central Arizona and western New Mexico,
Texas, and Colorado.

Shreve makes no distinction between the eastern (St. Lawrence-Great Lakes) and western
(Rocky Mountain) portions of his Northern Mesophytic Evergreen Forest. The former has
been retained as 18 on map 5, but the latter redesignated as 20w.

Shreve also does not distinguish between forested Swamps and grass Marshes. His areas
of these have accordingly been variously designated in map 5 as 26 (swamp forest), 8
(marsh), or 8-26.

At the points mentioned, therefore, recourse must be had to the original Shantz-Zon and
Shreve maps where accuracy of detailed reference is desired. The simplifications introduced
in maps 4 and 5 seem unavoidable if effective comparability is the end sought, and seem to
do a minimum of violence to the intent of the originals.

Kellogg's Alaskan map shows the presence and density of timber, not the affiliations of
the forest growth. His uniform "Timbered" area has therefore been divided, in map 5, be-
tween Northern (18) and Northwestern (21) forest, as shown by the broken line. His
"Sparsely Timbered" area has been designated as a variant of the Northern Forest, 18a.
His areas "Above Timber" are designated as a variant of Tundra, 1a; "Glaciers and Snow-
fields" are included in this.

Rhelford uses a single symbol for Tundra and for Paramos and High Mountain Forest,
which are distinguished as 1 and 24a in map 3.

In the reproduction of the Dominion of Canada map, "Cleared Portions" have been mainly
treated as Mixed Forest, as already discussed in a footnote to 19m. In the west, Treeless
and Above Timber Line have both been designated by the same symbol, 1, Tundra, because
of lack of distinction in the original. I have also introduced some simplification of the end-
less minor interdigitations of "Above Timber" with the various forests: 18; 18-20; 6-11-20;
11a; and 21.

[4] Where Piñon-Juniper is adjacent to two of these vegetations it has been assigned to the one that is mentioned first in this paragraph.

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V. CULTURE AREAS: ARCTIC COAST

THE NATIVE CULTURES and their areas will now be considered, points of di
ence from the classifications in current usage being discussed as they
The chief characteristics of the present classification are the following:

1. Specific attention is given to geographical and ecological factors.
2. The cultures are treated as historical nonequivalents.
3. Centers or climaxes of culture are defined as sharply as possible.
4. Relations of subordination between and within cultures being sought and exp
the number of basic areas is fewer, and of specific ones greater, than it has been custo
to recognize.

The segregation of the eighty or so areas dealt with is into six grou
namely:

A. Arctic Coast (A in map 6).
B. Northwest Coast (NW).
C. Southwest (SW).
D. Intermediate and Intermountain (I).
E. East and North (E).
F. Mexico and Central America (M).

With the partial exception of the fourth, each of these is believed to rep
sent a substantial unit of historical development, or of a prevailingly cha
teristic current of culture.

Of course, these six units are also interrelated; and on the grounds of
tural primacy and prevailing historical priority Mexico ought to be conside
first. But incompleteness and lack of organization of data make analysis
this area the least satisfactory; so that the reverse order of procedure, fro
peripheral to central, is for the present almost enforced.

The findings are embodied in map 6.

ARCTIC COAST

SOURCES OF ESKIMO CULTURE

Eskimo culture is the most differentiated of lower-grade cultures in Americ
It therefore deserves to be considered as constituting a primary division. Th
conclusion is strengthened by the unchallenged separateness of Eskimo spee
from any other American language, and the marked racial differentiation
the Eskimo from other American natives. Over its whole eastern extent th
culture has mixed little with that of the Indians, on either side of the boundary
Traits have crossed, but the culture wholes have remained conspicuously di
tinct. The culture has, however, numerous Asiatic relations; especially to th
northeastern Palaeo-Asiatics, but traceable as far south as the Kamchadal
beyond and west to the Samoyed and perhaps Lapps. Its Magdalenian rese
blances, while easily exaggerated and difficult to evaluate, are almost certain
to carry some historic significance. This, accordingly, seems the most nor
American culture of the continent in its major specific origins. Such a con
clusion, however, does not contravene the possibility that the characterizatio
of Eskimo culture as known to us was worked out in America.

As to ecology, there has of late been a tendency to emphasize the importance
of the tundra and the caribou as against the shore and the seal in Eskimo cul

...in wider historical perspective this seems correct, with reindeer equated
...caribou, and with reference to ultimate Eurasiatic origins. The use of coast
...and sea mammals would then represent mainly the development of a later
...American, or Northeast Asiatic-American, phase of the culture. If so, the
...inland caribou form of Eskimo culture found about Chesterfield Inlet and the
...Back River would have to be interpreted as a secondary, local reconvergence
...to a much earlier or pre-Eskimo phase.

...Steensby's view[1] is the opposite one: he regards Eskimo culture as having
...originated inland in the Mackenzie drainage, in a caribou habitat probably
...centering about Great Slave Lake, and as having only later pushed to the sea,
...where the seal provided winter food, while caribou hunting was retained,
...wherever possible, as the chief means of summer subsistence. This maritime
...adaptation was worked out in the region of Coronation Gulf and the isthmuses
...of Boothia and Melville peninsulas; and there it has persisted in purest form.
...This argument of Steensby's can, however, be read backward, as Hatt has
...done, just as well as forward; and the following reasons seem to favor an in-
...terpretation the reverse of Steensby's:

...1. The formation of the distinctive speech and physical type associated with
...so much of Eskimo culture is hard to account for in a particular part of a con-
...tinental interior which lies open, without geographical barriers or peculiari-
...ties. The selection of one portion of the Mackenzie drainage as the former home
...of Eskimo culture is arbitrary. If a caribou origin is to be hypothesized, the
...entire range of the animal from Alaska to Labrador might as well have been
...Eskimo.

...2. The cultural similarities with Asia are underweighted by Steensby. These
...are undoubtedly strongest about the Bering Sea; but the fact that there has
...been recent influencing in this region does not mean that all influencing is re-
...cent. It is rather an argument, in the absence of anything specific to the con-
...trary, that the influences are ancient also.

...3. Steensby's hypothesis makes the original sea-adapted culture persist in
...purest form at its original point of characterization, which is contrary to the
...age-and-area principle that persistences tend to occur at the peripheries. This
...principle, indeed, applies rather to traits or relatively small clusters of traits
...than to whole cultures. But while whole-culture types may appear with less
...purity toward their peripheries, this implies an intensity, complexity, and
...richness of characterization at the center which the Coronation-Melville area
...does not possess, being in fact more meager than the Alaska and Greenland
...peripheries. Its cultural quality is merely a certain "purity" of narrow spe-
...cialization along selected lines; which is most simply explained as a selection
...enforced by the extremity of high Arctic environment.

...4. Mathiassen[2] has shown that the late prehistoric "Thule" form of Eskimo
...culture of the Coronation-Chesterfield-Melville area is closer to that of Alaska

[1] An Anthropogeographical Study of the Origin of Eskimo Culture (Meddelelser om Grönland, vol. 53), 1917.

[2] Archaeology of the Central Eskimos, pts. 1 and 2, 1927, constituting vol. 4 of Report of the Fifth Thule Expedition [of] 1921–24.

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and Greenland than is the present Eskimo culture of the same region. O
elements determined as characteristic of this Thule phase, he first elim
57 as common to all Eskimos except where the environment inhibits the
Of the remaining 95, nearly half, or 47, reappear in recent Alaska and G
land but are lacking among the Coronation-Chesterfield-Melville tribe
Central Eskimo proper. Eighteen traits are confined to Thule and A
only 3, all scraper forms, are exclusive property of Thule and Central. O
95 nonuniversal Thule elements, 71 reappear among the recent Eskimo
the mouth of the Mackenzie west;[3] 58, among the Greenland Eskimo;
Baffinland and Labrador; only 16 among the four most specialized C
Eskimo groups—Copper, Caribou, Netsilik, Iglulik-Aivilik. In short, a
tively uniform phase of Eskimo culture not long ago prevailed unintern
edly from Alaska to Greenland, but was later modified, with a shift from
to caribou or winter-seal dependence, in the very region in which Stee
supposes Eskimo culture to have been formed; whereas the western and
ern ends of the Eskimo range preserved this old phase much more fully.
Baffinland and Labrador remained somewhat conservative; and here and
especially on Southampton Island and Smith Sound, isolated communities
tained much of the Thule culture relatively uninfluenced by the later Cen
Eskimo developments, even though local exigencies caused them to adopt
fied subsistence habits.

ECOLOGICAL PHASES

While Steensby's conclusion that Eskimo culture in the Coronation-Melv
area developed out of a pre-Eskimo interior culture can therefore be reject
his work is of the highest importance as an ethnogeographic study. He has
the first time outlined, for the whole of Eskimo territory, the importance
shore line, seasonal open water, drift and shore ice, driftwood or timber,
other natural features as they determine the presence or accessibility of va
ous animal species and the habitual movements, occupations, and implem
types of the Eskimo. What emerges from the total array of his succinctly
alyzed data is not the primacy or priority of one particular economic adap
tion, but a picture of the totality of Eskimo culture as a unit, modified
emphasis or reduction of its traits in direct response to local exigencies. H
seals are the important food, there whales, or walrus, or caribou, or birds
salmon, while others are as good as unavailable. According to ice and wa
and season, seals are taken by maupok or waiting at the blowhole, utok
creeping, at cracks or the edge of the ice, from the kayak, or by nets. E
this last method, which is so specially developed in Alaska as to look at f
as if its spread were determined culturally instead of ecologically, was kno
in Greenland, Labrador, and the Central regions. Where continuous ice
snow fields are lacking, the sled of course goes out of use, both in south

[3] This would not mean that an equal proportion of Alaskan elements would be found
the Thule culture, because Eskimo culture especially in southern Alaska has absorbed m
elements presumably non-Eskimo in origin. Mathiassen, however, considers the Point
row the most similar of all modern Eskimo cultures to the ancient Thule culture.

[4] Birket-Smith, as referred to below, accepts this change in the Central region, but
strues it as confirmatory of views similar to Steensby's.

and southern Alaska; but it is employed to the limit of its utility.
are eagerly hunted wherever they can be got. Whether for the most
they are surrounded, driven in fences, intercepted at passes, or kayaked
depends on the opportunities afforded by the country; more often
, in fact, two or more of these methods are used in support of one
So with houses. Where, as on Coronation Gulf and in parts of Baffin-
far from shore are the only dependable subsistence available during
erable part of the year, and the Eskimo have therefore to live on the
snow house may wholly displace that of stone or sod. In southern
and on the Mackenzie, on the contrary, driftwood is abundant,
timbered houses are built, and the snow house is lacking except as
shelter. On the rocky islets and headlands of Bering Strait, wood is
abundant and the houses stand on piles against the steep face of a slope.
hunting is productive, the umiak is well equipped and paddled;
, it is a freight boat, rowed by women; or where there are no whales
short season of open sea is spent inland to get caribou, as on the shores
Coronation Gulf and on Boothia Peninsula, the umiak is absent.

The list herewith shows the principal regional variants of Eskimo economic
, some twenty-five in number. These are direct ecological adaptations
the basis of a cultural inventory that is or apparently was substan-
uniform over the entire Eskimo range: skin boats, harpoon, bladder or
skin, spear thrower, three- or four-pronged bird spear, two-winged
spear, lamp, stone pot, house platform, type of clothing, ivory carving,
or social house, shamanism, type of myth or tale.

TABLE 2

REGIONAL VARIANTS OF ESKIMO ECONOMIC CULTURE

Southeast Greenland. Extinct.

Southeast Greenland. Angmagsalik.

Southwest Greenland. Subarctic culture, without sled, snow house, caribou, maupok or seal hunting; kayak hunting highly developed.

Northwest Greenland. A rather generalized type of Eskimo adaptation.

Smith Sound, Polar Eskimo. Loss of kayak, umiak, sled, salmon and reindeer taking, until renewed contacts with Baffinland about 1865; seal and walrus hunting; special dependence on birds.

Baffinland. Seal hunting and winter dwelling on the ice, hence maupok and utok methods and snow house.

North Labrador. Sealing from ice edge and kayak; reindeer important.

South Labrador. Same but more subarctic.

Southampton Island. Ancient (Thule) type of culture modified by a specialization on reindeer hunting; no skin boats.

Chesterfield Inlet and Back River: Kinipetu, Caribou Eskimo. Tundra habitat, with dependence almost wholly on caribou, secondarily musk ox; almost no use of coast or sea animals.

Melville Peninsula, including northwest Baffinland: Aivilik, Iglulik. Walrus, seals, reindeer important; snow house replacing stone or sod house.

Boothia Peninsula and King William Land: Netsilik. Seals by maupok and utok method, caribou, no walrus or whales, no umiak, snow house for winter habitation.

Coronation Gulf: Copper Eskimo. Much the same as last.

Mackenzie River. Large and small whales in summer, seals in winter, salmon. Much wood, timber houses. Here begin the first traits of specific Western Eskimo culture on the super-subsistence level.

Point Barrow. Whaling of primary importance; taking of seals especially by netting; reindeer hunting left to essentially inland groups. No snow house here or beyond.

Kotzebue Sound, including neck of Seward Peninsula. Seal netting; taking of large whales important.

Seward Peninsula, and Diomede and King islands. Whaling, walrus, seal netting, high development of umiak for voyaging; houses on piles.

Northeast Siberia: Yuit. Generally similar to last.

St. Lawrence Island. Similar especially to last.

Norton Sound, especially south side. Similar to Kotzebue, but with more southern influences, such as development of masks. Subarctic conditions begin here.

Yukon-Kuskokwim deltas. Shallow shore waters; no whaling; little sealing; prime dependence on salmon, supplemented by other fish and birds; no reindeer. Masks, feasts, wood carving in full development.

Bristol Bay. Little known.

Aleut. An open-sea culture, with dependence on fish and kayak-hunted seals.

Kadiak Island and opposite mainland. Temperate climate; salmon and other fish; high development of kayak. Social attitudes savor of Northwest Coast.

Kenai Peninsula-Copper River. Similar.

CULTURAL CLASSIFICATION AND HISTORY

In contrast to this uniform array of culture elements varied only according to local needs, there is a series of traits, little connected with subsistence, which mark off the western from the central and eastern Eskimo. These include labrets, masks, hats in place of hoods, coiled basketry or other weaving, pottery, grave monuments, mourning feasts or ceremonies, property distributions, war parties, perhaps clans or moieties. None of these extends beyond the Mackenzie, except for sporadic occurrences like occasional masks; many of them stop at or before Point Barrow and are therefore wholly Alaskan. In the main these traits seem to reflect the influence of the Northwest Coast tribes, especially the Tlingit, or, in part, of the Athabascans influenced by the Tlingit. Many may be ultimately Asiatic in origin; some, like pottery and coiled basketry, may have drifted in from a long distance away.

The primary division of Eskimo culture, then, apart from local adaptations comparable to those of shore and interior or valley and hill tribes in California, is into a Central-Eastern and a Western or Alaska-Siberian form, the former being "pure" Eskimo, the latter Eskimo plus a Northwest American and Northeast Asiatic addition.

It is a fair logical question whether the sequence implied in the word "addition" could not be reversed, and Eskimo culture be construed as having developed in its present richer Alaskan form in Alaska, the region of fullest contacts, and then diffused eastward, the rigor of the Coronation Gulf environment filtering out many of its supersubsistence elements, while necessity, and paucity of alien contacts, preserved the subsistence devices relatively unaltered, except for a measure of modification among the Coronation-Melville groups. This view involves a further one, namely, that the contact of cultures in and about Alaska which resulted in the formation of Eskimo culture caused

not only absorptions from the contributing cultures, such as masks and labrets, but also new productions such as lamps and skin boats, and that on the spread of this culture eastward out of Alaska the absorptions were in general lost and the new specific products retained. While this seems theoretically improbable, it may well have happened to a considerable extent because of the definite utility of the new productions.

Really, the two views are not incompatible. Influences from several seaboard cultures situated on subarctic or temperate shores may have met in the region of Alaska and produced an Eskimoid type of culture, which then in its eastward spread through the high Arctic became strained out into "pure" Eskimo culture as we know it today, both because of the unusual but necessary concentration in high latitudes on subsistence activities, and because of the specialization of these with reference to sea mammalian life. At the same time the culture impingements in Alaska continued, leading to further absorptions and a general enrichment of the culture, but also to less homogeneity and uniqueness of cast. On this view, the shores of the vicinity of Alaska would have been both an ancient and a modern meeting ground of various cultural influences, pre-Eskimo, non-Eskimo, and Eskimo; and from the stock of sea-adapted culture there accumulated, the shore peoples eastward selected, not only once but more likely several times or continuously, such elements as they could use, besides of course modifying them. Alaska then would be the point of origin—in the sense of point of crystallization—of Eskimo as contrasted with non-Eskimo culture as a whole, and at the same time the area where this culture remained most "mixed," least set apart by rigorous restriction to its own specializations.[5]

This interpretation of the culture, incidentally, accords well with the situation in racial type and speech, both of which are "purer," more characteristically or undilutedly Eskimo, in the east than in the west, especially if the Aleut are included.[6]

The fundamental difficulty about deriving Eskimo culture from the northern interior of America is that it is hard to conceive of an inland culture originating the many definite and accurate devices relating to the sea and sea life which constitute the most fundamental and distinctive aspects of Eskimo culture. To take as an example Birket-Smith's "two main props of coastal life" in the far north, the blubber lamp and seal hunting at breathing holes,[7] these both depend on and relate exclusively to sea mammals. The antecedents for the invention or development of these traits are much more nearly given in a subarctic sea-adapted culture than in a ruminant-hunting, wood-burning tundra or forest culture. The case is much like that of a people practicing a specialized agriculture, such as desert irrigation, under rigorously limiting natural con-

[5] Boas, Die Resultate der Jesup-Expedition, ICA 16 (1908, Vienna):3–18, 1910, inclines to the view, on folkloristic grounds, that there once existed a connection between the peoples of the Sea of Okhotsk and of British Columbia, which later was more or less interrupted by the arrival of the Eskimo about Bering Strait. If for "arrival of the Eskimo" we substitute "development" or "crystallization of Eskimo culture," Boas's opinion is not incompatible with that advanced here.

[6] Boas, AMNH–B 15:369, 1907; Hrdlička, BAE–R 46:364, 1930.

[7] AA 32:623, 1930.

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ditions. All we have learned of the nature of culture processes in the last generation would lead us to expect such an agriculture to be derived from a more generalized, less conditioned type of agriculture evolved elsewhere, rather than from a tour-de-force "invention by necessity" by a nonagricultural population finding itself in a habitat with insufficient wild food.

My division of Eskimo culture into primary Western and Eastern types is therefore not only statically descriptive of recent conditions, but also likely to reflect a fundamental historic current. The Western form is at once older and more heterogeneous, the Eastern is strained out. Both are littoral, and have been such as far back as they may properly be designated Eskimo.[8]

Within the Western or Alaskan area, the Aleut evidently constitute a subarea, whose validity is reënforced by the relative distinctiveness of Aleut speech and somatic type. Some of the specialists in the Eskimo field seem to regard the Aleut as an "Eskimoized" population; that is, an originally non-Eskimo group which took on something of Eskimo language and culture. It does not seem necessary to go quite so far in hypothesis as this. The Aleut may represent merely a specialization away from the other Eskimo. They live in a cul de sac, rather isolated from contacts; and their environment certainly is distinctive: oceanic islands, a damp, foggy, windy, raw climate. One could perhaps speak with more assurance of the place of Aleut culture if more were known of the Eskimo to the east of them.

Whether these Eskimo of the stretch of coast east of the Aleutians, from the Alaska Peninsula to the Copper River, are to be classed rather with the Aleut, with the Alaska Eskimo generally, or as a distinctive subunit of these, it is difficult to decide without an intensive comparative study, and for this modern ethnographic data are not available. The subarctic environment per se of these Eskimo does not seem to have differentiated them much if any more than it has the southern Greenland Eskimo; they make kayaks, for instance, in an area of good growing timber. But on the cultural levels above those connected with subsistence they have been exposed to strong Indian influences, as the Greenlanders have not. These influences, Tlingit in recent times, have presumably been strongest at the eastern border, about the Copper River. Also, the stretch from the Kenai Peninsula to the Copper River is sometimes reckoned as ecologically more nearly related to the habitat of the northwestern Tlingit than to the Bering Sea and Arctic coast of Alaska.[9]

The inland culture of the Chesterfield Inlet-Back River or Caribou Eskimo may probably best be regarded as primarily a specially marked instance of the ecological response variations discussed above. This group seems never wholly to have lost touch with the sea. They have merely gone one step farther than the inland minority of the Point Barrow division. These two groups are of interest as true tundra dwellers; but it is doubtful if they are very much more

[8] Steensby's "Neo-Eskimo area of acculturation" differs from the Alaska Eskimo area as here defined. He makes its distinctive features recent, mainly derived from Asia, and localizes it about Bering Strait, with Kotzebue and Norton sounds. My Western area takes in, with its variants, all the Eskimo-inhabited shores of Alaska, and is both ancient and modern, with the recent absorptions rather from American Indian than Asiatic sources.

[9] Compare below, Northwest Coast, Northern Maritime subarea, p. 29.

specialized away from "normal" Eskimo sea-mammal and shore life than are the Yukon and Kuskokwim salmon-eaters.[10]

The recent Eskimo may therefore be classified culturally as follows:

1a. Central-Eastern: From Coronation Gulf east.
1b. Barren Ground: Caribou Eskimo.

2a. Western: Mackenzie, Alaska to Bristol Bay, Siberia. The Yukon-Kuskokwim Delta may prove to belong with 2c rather than here.
2b. Aleut.
2c. Pacific Coast: Alaska Peninsula to the Copper River.[11]

Summary

The origin of Eskimo culture is unknown. Its ultimate affiliations seem Asiatic rather than American. The area of specifically Eskimo characterization may have been American or Asiatic-American; but it is unlikely to have lain east of Alaska, and it was coastal, with primary dependence on sea mammals and fish. This culture came to extend from Siberia and Alaska to Greenland. After a time it became somewhat modified in the Central area, especially west of Hudson Bay, partly through the lure of caribou hunting, partly through impoverishment due to arctic rigor. Meanwhile, too, perhaps even earlier, the Western Eskimo culture began to alter as a result of the fairly developed cultural contacts to which it continued to be exposed. The most important of these influences were much diminished north of Bering Strait, more so beyond Point Barrow, and practically terminated at the mouth of the Mackenzie, though a few of the older elements may have penetrated sporadically even as far as Greenland. Also, these Northwest Coast and Asiatic influences have continued to recent times, possibly with increased force. Otherwise, Eskimo culture has retained its stock relatively unaltered, except for a modification into about two dozen local phases, which are essentially ecological subsistence adaptations with resultant reduction or emphasis of common culture traits.

[10] K. Birket-Smith takes the opposite view in The Caribou Eskimo, Rept. Fifth Thule Exped., vol. 5, pts. 1 and 2, 1929 (esp. pt. 2, 212–233), and in a controversy with Mathiassen, AA 32:591–607 and 608–624, 1930. He postulates an inland Proto-Eskimo stage, more or less represented today by the Caribou Eskimo, and only by them. This on pushing to the littoral became Palaeo-Eskimo culture, which in turn developed into Alaskan, Central-Thule, and Greenland phases of Neo-Eskimo. This was still later replaced in the Central region by the Eschato-Eskimo culture, which is closely allied to the Palaeo-Eskimo, and therefore represents a reversion due to renewed influences or advances by Eskimo who had remained inland with the Caribou group. See especially Car. Esk., fig. 5, p. 232; also ICA 23 (1928, New York):470–475, 1930. The evidence on which his and Mathiassen's construals rest is too detailed to be gone into here.

[11] H. B. Collins, Jr., Culture Migrations and Contacts in the Bering Sea Region, AA 39:375–384, 1937, reviews judiciously the recent archaeological and other data which at once illuminate and complicate Western Eskimo culture history. The Thule culture, he concludes, entered Alaska from the east, and late, contemporary with the Punuk phase (post-Old Bering Sea of St. Lawrence Island and post-Birnirk). It is not known archaeologically south of Cape Prince of Wales, and in the historic period it is well represented at Point Barrow. Collins also directs attention to the finding of Jenness that the greatest break within Eskimo speech comes between Norton Sound and the mouth of the Yukon. All this suggests that my primary classification above may have to be revised, the "Central-Eastern" Eskimo division extending westward beyond the Mackenzie to Bering Strait, the "Western" lying south thereof. The two grand divisions would then be Eskimo on the Arctic Ocean and Eskimo on the Pacific.

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VI. CULTURE AREAS: NORTHWEST COAST

THE CULTURE of the Northwest or North Pacific Coast is that one of the more highly developed and differentiated cultures in America which has been least affected by influences from Middle (Nuclear) America. It has been reached to an unusual degree by influences from Asia. Some of these, slat or rod armor and hats, for instance, show distributions as far southwest as the higher civilizational centers of eastern Asia. Many other resemblances are vaguer, or show interrupted distributions, but carry even farther, to Indonesia and Oceania. carving, masks, wealth emphasis. Similarities to the eastern Palaeo-Asiatics, however, may be due to cultural currents from America as much as into it.

A third trend of the culture is the unusual degree to which its material, native and imported, has been worked over into its own patterns. The area is evidently one of unusual intensity of cultural activity. This intensity seems to have been still heightening at the time of discovery, and to have received a further temporary impetus from the first European contacts. This powerful repatterning has probably disguised the foreign origin of much Northwest Coast culture material. The historic source of material of this kind should prove discernible when intensive knowledge of the area is combined with a willingness to consider the probability of remote origins. The present indications are that perhaps as much of the reworked material derives from Asiatic as from distant American centers.

Recent conditions at the southern end, as well as the slender archaeological evidence available, suggest that the Northwest Coast culture was originally a river or river-mouth culture, later a beach culture, and only finally and in part a seagoing one. This means that the recent hinterland cultures of the Columbia-Fraser drainage (Plateau) and of the Intermountain Athabascans evidently provide approximate illustrations of an early stage of Northwest Coast culture. This situation is implicit in Wissler's basing of both the Northwest Coast and the Plateau culture on a Salmon Area. Of course no mechanical subtraction of hinterland from coast culture suffices for a true estimate of the kind or amount of culture specialized on the coast, even apart from the variant conditioning of subsistence, because the hinterlands have secondarily absorbed culture material and forms from the coast as well as from the east.

The ecological correspondence is remarkably close for the Northwest Coast. The vegetational-climatic area of the Northwestern Hygrophytic Coniferous Forest (maps 2–5) tallies almost absolutely with the cultural one. This forest is generally considered as extending into northern California. The culture extends to Cape Mendocino and the lower Eel River, which lie about at the middle of the Redwood belt (map 4). This Redwood strip may be viewed as a specialized southern extension of the northwestern forest; its denser and more characteristic part is its northern half, which belongs clearly to the Northwest culture.

The areal types of the Northwest culture can be formulated only tentatively. While this is one of the more intensively studied regions of the continent, interest has been away from classificatory and developmental problems.

1. *Northern Maritime.* Tlingit, Haida, Tsimshian; probably also the Haisla.[1] Three subtypes can be distinguished.

1a. *Northern Maritime Mainland.* The Tlingit northwest of the Alexander Archipelago, on the coast backed by glaciated mountains. Resemblances to Athabascan inlanders seem fairly strong. This is also a separate ecological region. Osgood[2] distinguishes a Southeastern and a Glacial Coast region in Alaska, separated approximately by the Lynn Canal. The present or Northern Tlingit subarea corresponds with the Glacial Coast region; but Osgood carries this farther west, to include the Kenai Peninsula. From the Copper River to Kenai the coast was Eskimo; and, as already stated, these Eskimo, the Ugalakmiut and Chugachigmiut, seem to deserve setting apart as a subtype. In any event, if the Glacial Coast region of Alaska is a valid natural area, it marks the meeting place of two deeply different cultures, Eskimo and Northwest Coast. Whether Eskimo or Tlingit are the later intruders is not known; but the Eskimo in this tract have taken over more obviously Tlingit traits than have the Tlingit adopted the Eskimo ones. It is of course possible that at an earlier period, when the Northwest culture was as yet less developed, the Eskimo influence was the more potent, but that the elements derived from it[3] have long since been worked over so as to seem native Northwestern. Very little is known about the phenomena of border contact between Tlingit and Eskimo; and an important study is indicated here if the two cultures have not yet disintegrated too completely.[4]

1b. *Northern Maritime Archipelago.* Southern Tlingit, Haida, Tsimshian proper. By general agreement these tribes represent the culmination of Northwest Coast culture during the nineteenth century.

1c. *Northern Maritime River.* Niska, Gitskyan, Haisla. A less intensive variant of the Northern subculture, localized on rivers or inlets rather than on the sea.

2. *Central Maritime.* Central British Columbia coast, northern and western Vancouver Island, Cape Flattery. The peoples are Bella Coola, Heiltsuk, Kwakiutl proper, Nutka, Makah, Quileute, Quinault, perhaps Chehalis. According to Dr. Olson, whale hunting and secret societies extended to the Quinault. It is on the basis of these traits that the limit of the area has been drawn just north of Shoalwater Bay. This area is predominantly Wakashan. The interior water boundary comes about Cape Mudge in latitude 50°, which seems to mark also a climatic and minor vegetational change: to the south, the east side of Vancouver Island is relatively dry. Two subdivisions are recognizable in the Central Maritime area:

2a. *Northern Central Maritime.* Kwakiutl, Heiltsuk, Bella Coola, with more developed art, ritual, and social organization, but mainly facing protected water.

2b. *Southern Central Maritime.* Nutka and seaward tribes of Washington, with whale hunting.

3. *Gulf of Georgia.* Southeastern Vancouver Island, mainland coast of southern British Columbia, north side of Olympic Peninsula. Wholly Salish and facing protected salt water; climate somewhat less humid than in the preceding. In terms of water, the specifying elements are the mouth of the Fraser, the Gulf of Georgia, and the straits of Georgia and Juan de Fuca.

[1] The northern mainland Kwakiutl have not been studied systematically and are difficult to place. The Haisla are tentatively assigned to area 1, and the Heiltsuk (Bellabella, Rivers Inlet) to area 2, on the basis of Boas's statement (AA 26:323–332, 1924) that the former have, and the latter have not, matrilinear exogamic clans.

[2] "Alaska," in Shelford, work cited, 141–146, 1926.
Harshberger has the Sitkan region (map 2, no. 21a) extend from northern Vancouver Island to beyond the Copper River, excluding the Kenai Peninsula.

[3] Whale hunting, for instance, which in the historic period was practiced in the Northwest area only on Vancouver Island and about Cape Flattery.

[4] K. Birket-Smith and F. de Laguna, The Eyak Indians of the Copper River Delta, Alaska (Copenhagen, 1938), have described the remnant of a newly determined tribe which is non-Eskimo, non-Tlingit, and wholly distinct from the previously recognized Athabascans of the Copper River above the delta. The speech carries Athabascan suggestions, but if Athabascan it is greatly deviant; it may prove to be a fourth member of Na-Dene (Athabascan, Haida, Tlingit).

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4. *Puget Sound.* Salt but still water. Salish, plus probably the Chimakum. Groups with out true secret societies. The Skagit probably belong to this group; the Lummi and Nuts also the Klallam, to the last.[5]

5. *Lower Columbia,* with coast from Shoalwater Bay to Umpqua Mountains. Chinoo Chehalis, Tillamook, and Yaquina-Alsea-Siuslaw.

6. *Willamette Valley.* Interior. Kalapuya.

7. *Lower Klamath.* Northwestern California with Rogue and upper and middle Umpqu drainage in Oregon. Mainly Athabascan, but also including Kus, Yurok, Wiyot, Karo Culmination on lower Klamath, among Yurok, Karok, Hupa.[6]

A subperipheral transition region is recognizable, extending in an arc from the Shast on the middle Klamath to the Wailaki and Sinkyone on the middle Eel, but is here reckoned as part of the California culture area.

These areas are far from equivalent in cultural intensity and depth. The climax of the region seems long to have lain in its northern half. The four southern areas are distinctly subclimatic and culturally peripheral. During the last half of the nineteenth century, the climax must be credited to the Northern Maritime tribes, on account of their aggressiveness and the vigor of their art. Their culture was then in an expansive, acquisitive phase. Previously, the climax was probably situated in the second or Wakashan group, who worked out the Hamatsa cannibal ceremonies which the northerners later borrowed. Still earlier, the climax may have lain in the third area, about the mouth of the Fraser and the opposite shore of Vancouver Island. If the theory is correct that the Northwest culture as a whole originated on rivers and only slowly ventured on the open sea, this area would be the logical one for the first stages of its characterization. The Lower Columbia area may have experienced similar impulses, but these would have been checked by the debouching of its river on a straight, rugged coast, without sheltered salt waters to encourage the apprenticeship of transformation. Puget Sound is a backwash. It may have been an important area in early stages of the culture, but its very shelteredness from the sea destined it to relative lag as the oceanward development proceeded. The Willamette Valley formed even more of a pocket. It is the only interior culture in the Northwest region, and is probably best construed as an inland modification of a form of the primitive river phase. The fact that the valley contains enough prairie to cause it to be classified by some authorities as grassland (map 5) would have contributed to its cultural differentiation.

[5] H. Haeberlin and E. Gunther, The Indians of Puget Sound, UW–PA 4:1–84, 1930, print a map of Puget Sound tribes (p. 8) which shows a distribution somewhat different from that given in map 1 accompanying the present work. It is significant that several tribal territories (Skykomish, Snuqualmie, Muckleshoot) are shown entirely away from salt water, and others (Skagit, Nisqually) barely touching it.

Another map has recently been issued by Spier in Tribal Distribution in Washington, Gen. Ser. in Anthr., no. 3, 1936.

[6] The Tolowa are clearly subclimax as against the Yurok, and the Tututni apparently more so. With the Kus and Siuslaw, Lower Columbia elements begin to appear and are stronger among the Alsea and Tillamook. The Kus and Siuslaw thus cannot be split, as the text has it, but whether they both go rather with Lower Klamath or with Lower Columbia is less clear. These findings rest on field studies in 1934 and 1935 by Philip Drucker, The Tolowa and their Southwest Oregon Kin, UC–PAAE 36:221–300, 1937, and H. G. Barnett, CED VII–Oregon Coast, UC–AR 1, no. 3, 1937.

[7] Among the Heiltsuk Kwakiutl, to be exact, according to Boas, USNM–R 1895:661, 664, 1897. The evidence is native tradition, but confirmed by ceremonial names which are Kwakiutl.

It is the only tract in the Northwest area which is not continuously forested. The Northwest California subclimax has clearly been built up on a basis of river habitat. Its center lies on the only stream south of the Columbia to drain from the interior of the Sierra-Cascades mountain wall, and nearly at the meeting point of three forests, namely, the Northwest Coast Douglas Fir, the Northwest Extension Redwood, and the California Pine (map 4).

It is evident that the descriptive subdivision of the long north-south Northwest area into seven to ten approximately transverse segments resolves itself, as soon as the relations of the segments are viewed with interest in environmental adaptation and historic development, into a classification into longitudinal belts, nearly but not quite parallel to the coast and expressive of degrees of utilization of water, from river to mouth to still salt water to ocean, with a subsidiary use of ocean replacing primary adaptation to inland salt water where this is not available. According to these degrees of water adaptation, the areas group thus: 1, Willamette; 2, Klamath, Columbia, Puget Sound; 3, Gulf of Georgia; 4, Central Maritime, Northern River, Northern Mainland; 5, Northern Archipelago. Within each belt the more northerly subareas usually have the more intensive culture. Also, except in the most southerly area, the center of intensity within each area seems to lie in its northern portion. The degree of development of such luxury aspects as art and society rituals is in agreement with this environmental-historical view.

From both the northward centering and recent northward trend of the climax of the whole Northwest Coast, it is expectable that more refined analysis will confirm the conjecture that Asiatic influences perhaps were more potent than Nuclear (Middle) American ones in the specific shaping of Northwest Coast culture. If direct Oceanic influences have ever to be reckoned with, they may complicate the picture.

VII. CULTURE AREAS: SOUTHWEST

THE DISTINCTNESS of the Southwest was recognized long before there was any thought of general areal classification. The name refers of course to position within the United States. Wissler, however, included northern Mexico nearly to the Tropic of Cancer, in the area; and in this he was followed by me, in my modification of his hemispheric classification.[1] As this inclusion has provoked no criticism, it may be assumed that dissent has not been lively. According to this view, about half of the native Southwest lay in what is now Mexico. But this half is little known. Both archaeological and ethnological studies have been extremely meager, and until recently the Spanish ethnographic documentation from the period of exploration and settlement had not been gone over systematically.

Now at last there is available a digest and interpretation of the documentary data by Beals.[2] This has been specially drawn upon for the consideration of Mexican areas, farther on in the present monograph. The Beals data were necessarily brought together primarily with reference to the situation in Mexico just as the current data on the American part of the Southwest have been gathered as relating to the situation in the United States, especially to the Pueblos and their relations to the east, north, and west. The two sets of data thus by no means integrate fully; and it will require much fuller information, and its gradual digestion, before anything more than tentative classifications and attributions of the cultures south of the international boundary can be made. Along the Pacific coast, to be sure, a line of demarcation between the Southwestern and Central Mexican spheres of culture influence can be drawn with a certain degree of confidence, so as to include the Cáhita in the Southwest, the central Sinaloa peoples in Mexico.[3] In the interior, however, it is much more dubious how groups like the Tarahumar and Concho should be construed as affiliating. The Tarahumar are here provisionally classified as in the Southwest, the Concho in the Mexican sphere. The situation is considered further in the Mexican section, especially with reference to the linguistic relations that might be pertinent.[4] All in all, however, the question of the Mexican-Southwestern frontier must be left an essentially open one for the present.

I have recently pointed out[5] that the known Southwest appears to comprise two related but consistently distinctive culture types: one characterized by the Pueblo culmination, and one which might be named the Sonora-Gila-Yuma. The common elements such as agriculture, cotton, pottery are obvious. The Pueblo culture shows masonry, clustered houses, stories; the kiva ceremonial chamber, altars and sand or meal paintings, masks and ancestor impersonation, priestly offices, elaborate ritual, much visual and verbal symbolism with

[1] Anthropology, fig. 34, 1923.

[2] The Comparative Ethnology of Northern Mexico before 1750, UC–IA no. 2, 1932.

[3] C. O. Sauer, Aztatlán, UC–IA no. 1, 1932.

[4] For instance, the Tarahumar and Concho affiliate linguistically with the Opata and Cáhita, who are here reckoned in the Southwest; the Tepehuán with the Pima, also considered Southwestern. See below, and UC–IA no. 8, 1934.

[5] UC–PAAE 23:375–398, 1928.

special reference to colors, directions, fertility, and emergence; matrilineal descent; pacific inclinations; pottery with a whitish ground, polychrome or glazed painting, and texture decoration by corrugating. The Sonora-Gila-Yuma culture possesses adobe, wattled, or brush houses, village instead of town type of settlement; no kivas and few altars, little visibly expressed symbolism; simple rituals with few masks; shamans rather than priests; patrilinear institutions; warlikeness; a pottery reddish, monochrome or with one design color, uncorrugated; canal or river overflow irrigation.[6]

As the vegetation maps show, the Pueblo area lies fundamentally within the sagebrush-juniper-piñon association, with good-sized areas of short grass and desert grass, and pines in the mountains (maps 2–5, 8). The Sonora-Gila-Yuma area is prevailingly one of true desert, with the creosote bush selected by some authors as the characterizing plant (maps 4, 8), the succulence of the aridity-resisting vegetation of certain districts emphasized by others (maps 3, 5); and, except in the Sierra Madre, with an almost complete absence of forest growth. These two distinct plant covers are of course a function of altitude and climate. The Sonora-Yuma subarea averages much lower than the Pueblo; the heat equator passes through it; evaporation is as high as precipitation is low; and a number of included tracts are reckoned as extreme desert (map 3). The Pueblo region is high, cold in winter, and subdesert (map 3)—a borderland between technical desert and steppe,—in fact, more largely the latter (map 24). The correspondence of environment and culture is close for these two subareas. Geographically, they lie roughly northeast and southwest toward each other. In Arizona, the Mogollon rim forms the boundary between the Colorado Plateaus and Basin-and-Range physiographic provinces, as well as between the two cultural subareas.[7] Desert conditions extend southward through much of Sonora and Mexican California. Whether Chihuahua forms part of the same desert or a somewhat differentiated one, is not clear. A differentiation seems more likely on account of the greater altitude. It would apparently also fit the cultural situation better.

On its other side, the Pueblo environment extends northwestward beyond the limits of Pueblo or Southwestern culture. The sagebrush-juniper association prevails over the Great Basin and beyond into the Snake portion of the Columbia drainage. Here, then, the correspondence of ecology and culture, at least in the recent distribution of the latter, breaks down. It holds sharply within the Southwest—at least its known portion; it does not hold beyond. The fact that the environment of one of the two Southwestern subareas runs far outside the cultural Southwest strengthens the probability that the two

[6] Among archaeologists Hohokam has now come into general usage for the prehistoric phases of what is here called Sonora-Gila-Yuma culture. Sequences within Hohokam are now almost as well known as within Basket Maker-Pueblo, thanks especially to the work of Gila Pueblo as directed by H. S. Gladwin and published in the Medallion Papers since 1928. Kidder has recently proposed Anasazi as a counterpart term to replace Basket Maker-Pueblo (The Pottery of Pecos, 2:590; with Anna O. Shepard).

[7] The Sonora-Gila-Yuma subarea lies largely in the Basin-and-Range and allied Sonoran Desert and Sierra Madre provinces. The Pueblo subarea is physiographically more varied, extending over portions of the Colorado Plateaus, Rocky Mountains, Basin-and-Range, and Great Plains provinces. See map 7.

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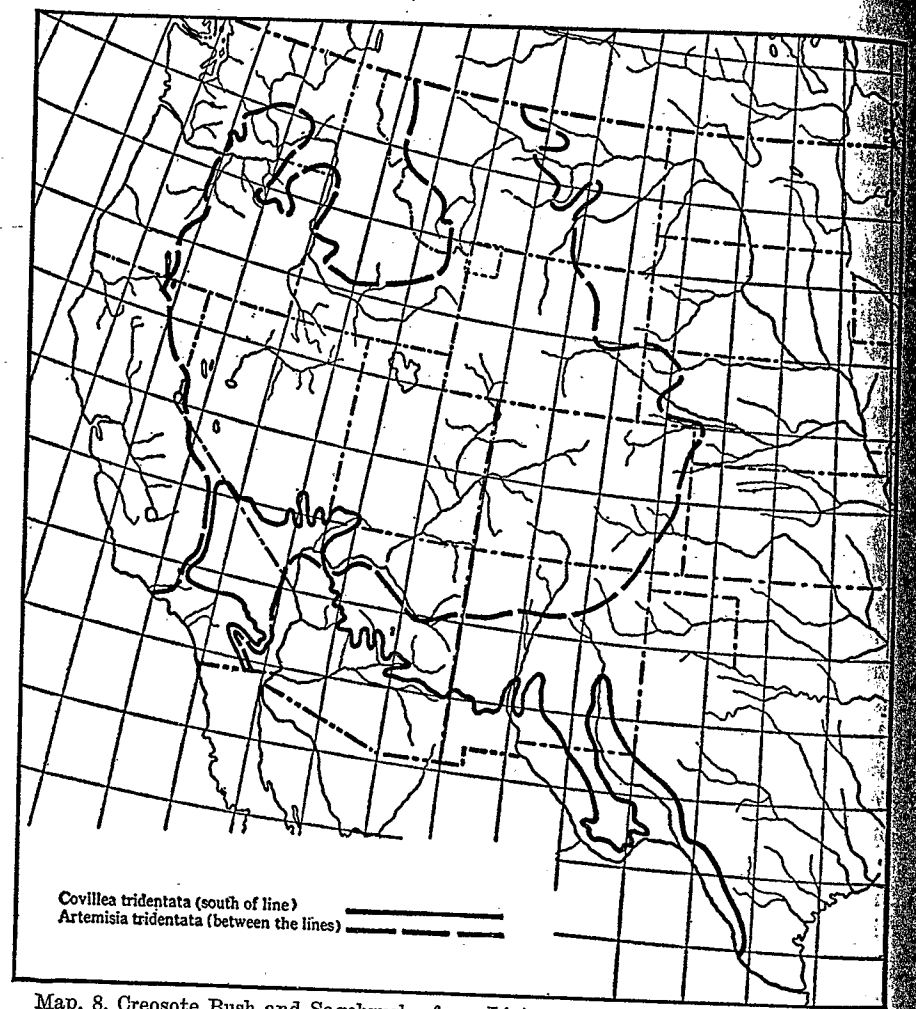
subcultures are fairly distinct, because it suggests that the history of one of them contains influences lacking in the other.

It seems best first to delimit and subdivide the two areas in their recent manifestation, and then to consider their inferable history.



Map. 8. Creosote Bush and Sagebrush; from Livingston and Shreve. The Sonora-Gila-Yuma area falls typically within the occurrence of the former; the ancient Pueblo area, in both, plus forest and grassland,—but in its present range is restricted to sagebrush or immediately adjacent vegetation. The sagebrush range, however, is far greater to the north than the widest Pueblo extension at any period.

1–2. PUEBLO SUBCULTURE TYPE

1. *Pueblo:* Tano, Keres, Zuñi, Hopi. If Sapir's conjectures in regard to the ultimate linguistic affiliations of these groups are correct, half or more of them would be of Uto-Aztecan origin in the wider sense—Aztec-Tanoan. The true Pueblo culture is so distinctive, and so well known both ethnologically and archaeologically, that its detailed discussion here is unnecessary. It forms

a very definite climax of established antiquity and of an intensity possibly equaled only at one or two other points north of Mexico. This climax culture appears to have reached its peak, at least in certain aspects, some centuries before Caucasian discovery, and its greatest areal extension several centuries earlier still. At no period of its history is there indication of its having influenced surrounding or distant cultures at all strongly. It constituted a localized and self-contained culmination.

2a. *Inter-Pueblo:* Navaho; and 2b. *Circum-Pueblo:* Apache. The Navaho have accepted somewhat heavier Pueblo influencing than the Apache. Both these Athabascan groups made pottery and farmed only to a subsidiary degree. The cultures of both gradually became, as it were, parasitic on Caucasian culture in their economic aspects, although in different ways: the Apache frankly predatorily, with the taking over chiefly of horses and weapons; the Navaho rather by theft and imitation, with rearing of flocks, weaving of wool, and working of silver. It is not known how much of these practices came to the Navaho through the Pueblos and how much directly from Caucasians. At any rate, their culture had essentially taken on its present-day aspect by the middle of the eighteenth century, possibly considerably earlier. It has also flourished, mainly along the lines then set, since the progressive Americanization of the Southwest, until today the Navaho constitute a definitely perceptible factor in the economic life of New Mexico and Arizona. They have multiplied, are still spreading territorially, and have worked out a unique and interesting subsistence system which is different from both the native and the Caucasian economies out of which it has been hybridized.

In origin the Navaho and Apache are of course one people, as shown by their close dialectic relationship and by the Spanish habit of classing the Navaho as Apaches. The differentiation between them[8] seems the result less of difference in natural environment than of difference in cultural geography. The Navaho habitat lay between the Hopi and Rio Grande Pueblos, with Zuñi on a third side. They were also fairly effectually shut off by Apache groups from direct involvement in the unsettled, war-embroiled life of the western edge of the Plains. Distrusted and feared though they might be by the Pueblos, especially after Spanish pacification, they were removed from the atmosphere of war as a prime occupation of life; took up the gainful arts of their Pueblo and Spanish neighbors; and laid the foundation of the special economic system which they still adhere to. Hand in hand with this went two other developments: a greater receptiveness toward the material of Pueblo ritual, and an accelerating increase in numbers. The result of the latter factor was that whereas three or four hundred years ago the Navaho constituted a small and culturally scarcely distinguishable fraction of the Apache, they are now well set apart in customs from this parent body, and perhaps five times as numerous as all its other divisions combined.

In terms of precise ethnological knowledge, the Apache are, with the possible exception of the Ojibwa, the least-known surviving North American

[8] This differentiation is similar in some ways to that of the Yaqui and Mayo, as discussed below.

group among any of like areal extent and historic importance.[9] Their numerous tribes or bands may be grouped according as they lived west or east of the Rio Grande. Roughly, the two divisions correspond to the modern official and reservation classification into White Mountain and San Carlos Apache and Mescalero and Jicarilla Apache.

The westerners comprise the Tonto, Coyotero, Pinal, Arivaipa, Pinaleño, Chiricahua, Mogollon, Gileño, and Mimbreño.[10] Some of these are probably subdivisions of others. Their total range was from the Tonto Basin in central Arizona to the Mimbres-Guzmán Basin southwest of El Paso in Chihuahua. The beginning of their habitat formed the effective Spanish northern frontier in the eighteenth century, and thus largely determined the modern international boundary along western New Mexico and eastern Arizona. These Western Apache groups lived away from the plains and the dependable range of the bison, and were indubitable southwesterners.[11]

The Eastern Apache,[12] on the contrary, seem all to have depended consid-

[9] This was true when written in 1931, but fortunately will not hold much longer, because of the intensive studies by Opler, especially on the Eastern Apache, by Grenville Goodwin on the Western, and by Gifford through an element survey of both divisions in 1935. The results should be available in print soon. Goodwin has published a valuable preliminary paper (AA 37:55–64, 1935). It appears that the Apache are excellent and willing informants: the neglect has been by ethnologists.

[10] This classification of Apache tribes follows primarily the 1796 account of Cordero cited in Orozco y Berra, 368.

Goodwin, in the paper cited in the preceding footnote, classifies the Western Apache into five tribal groups: White Mountain, Cibecue, San Carlos, Southern Tonto, Northern Tonto. These subdivide into bands—White Mountain: Eastern (much the largest territory of any) and Western; Cibecue: Carrizo, Cibecue, Canyon Creek; San Carlos: Arivaipa, San Carlos, Apache Peaks, Pinal; Southern Tonto: Mazatzal band and semibands 1 to 6; Northern Tonto: Fossil Creek, Bald Mountain, Oak Creek, Mormon Lake. The twenty-one territories are shown on a map. Their total range is small: about 110 miles by 65. Goodwin's and my Western Apache are, however, not the same. In default of knowledge, I have carried their eastern boundary to the Rio Grande. He defines them as Apaches within present Arizona during historic times *except* the Chiricahua, Warm Springs, and allied divisions, and the Mansos of Tucson. Only my first five divisions are therefore comprised in Goodwin's Western Apache: the Chiricahua, Mogollon, Gileño, and Mimbreño he excludes. He does not say whether the setting apart of his Western Apache rests on dialect, native sentiment, common relations with the whites, or some extrinsic consideration. I hold no brief for the Rio Grande as a line of division: rivers rarely are frontiers in native America. But it would be surprising if the Apache of the upper Gila drainage really belonged ethnically with those beyond the Rio Grande; and Goodwin does not say that they did. Quite likely his Western Apache are simply those now on reservations in Arizona. This would account for his omitting from them the Chiricahua, who were placed with the Mescalero on a New Mexico reservation.

[11] Goodwin, 61, 62, estimates farmed food at 20–25 per cent of the total Western Apache consumption, with the proportion of families farming varying from a majority of those in a band to none, the ratio in general diminishing from southeast to northwest. Of nine wild staples, he singles out mescal (agave) and acorns as most important; the others are sahuaro, mesquite, yucca, sunflower, tuna, piñon, juniper.

[12] Gifford, as a result of his 1935 field survey, classifies the Eastern Apache (that is, those not called Western by Goodwin) into four larger divisions and a total of fourteen subdivisions, as follows. (1) Chiricahua-Warm Springs: Chokalene and Chihene of the San Francisco and Alamosa rivers, upper Gila drainage in New Mexico (Mogollones ?); Shaiahene or "westerners" of the Huachuca Mountains (Nogales-Bisbee area, Arizona); another division to the west of the last-named (these must be the Mansos of Tucson); Indedai of Sonora-Chihuahua. There is no mention of a Chiricahua division proper between the first two and last three and adjoining the "Western Apache" Pinaleño and Arivaipa on the southeast. All this division is well west of the Rio Grande. (2) Mescalero division: Kahoane, the most westerly group, apparently east of the Rio Grande; Ni'ahane, central, presumably about the Capitan Mountains and the Sierra Blanca; Huska'ane, or "plains people," to the east, in the Pecos Valley; Tuetenene, south of the Rio Grande below the mouth of the Pecos, namely, in Coahuila, and said to be "half Lipan"; Zitachisene, of Azúl, toward Chihuahua City, perhaps belonging rather with Chiricahua than with Mescalero. (3) Jicarilla: Setide, "sand people," or Ollero, to the west; Gusgayi, "plains people," or Llanero, on the east (Opler, AA 38:202, 1936, calls them Saidinde and Gulgahen, and defines their range as on the upper Rio Grande, claiming north to the Arkansas and east to the Canadian). (4) Lipan: Tuensane, "big-water people," westerly; Chishene, "woodland people," easterly; perhaps also Tuetenene, mentioned above. Gifford's "Eastern" Apache totality, like Goodwin's "Western," apparently reflects modern reservation habitat. This in turn may rest on ethnic affiliations; but geographical probability is to the contrary. Until there is specific evidence linking the Chiricahua with the Mescalero rather than with the White Mountain-Cibecue-Tonto in prereservation days, it seems most reasonable to consider all the Apache west of the Rio Grande, or at least in the Gila drainage, as an ethnic unit.

Opler, Chiricahua Apache Social Organization (in F. Eggan, ed., Social Anthropology of North American Tribes, Univ. Chicago, 1937), p. 176, makes the Chiricahua closer, culturally and linguistically, to the Mescalero than to any other Apache group.

H. Hoijer, The Southern Athapaskan Languages, AA 40:75–87, 1938, classifies as follows. The Athabascan languages of the Southwest have a single origin within Athabascan, and have diverged: I, Western group, consisting of IA, Navaho, IB1, San Carlos (Goodwin's "Western" Apache), IB2, Chiricahua and Mescalero; II, Eastern group, consisting of IIA1, Jicarilla, IIA2, Lipan, IIB, Kiowa Apache. Group II thus consists of Apaches on or fronting the plains; I, of Apaches west of the Rio Grande, except that the Mescalero have relatively recently detached themselves from the Chiricahua to live east of the Rio Grande.

erably, and some of them perhaps primarily, on the bison hunt. They included the Jicarilla of the headwaters of the Rio Grande—sometimes considered a branch of the next; the Faraones between the Rio Grande and Pecos; the Mescalero along the Pecos; the Llaneros or "plainsmen" between that stream and the Colorado; and the Lipan southeast as far as to the Karankawa of the marismas or swamps of the Texas coast. Of these the Lipan, although true Apache in origin, formed an outpost, and are included below, on geographical grounds, though perhaps wrongly, in the South Texas culture area. The others all appear to have fronted the plains or to have lived on them until partly crowded back by the Comanche after 1700. They were thus part of the tribes within the old, prehorse, Plains culture; perhaps the principal southern plains tribes. The Kiowa-Apache apparently are a fragment that remained actually in the plains. The Jicarilla, somewhat isolated from all the others in their northerly habitat, became less predatory and effected a quasi relation with the Spaniards and northern Pueblos. The other tribes, or their remnants, have lately come to be known as the "Mescalero." How far the southwestern elements in recent Mescalero and Jicarilla culture predate or postdate the horse and the rolling back of the Eastern Apache by the Comanche, remains to be ascertained. It would seem that their nineteenth-century culture contains absorptions from the Plains culture of that period, probably in the main by way of the Comanche and Kiowa. But if the views set forth below on the development of historic Plains culture are true, these absorptions would prove little concerning relations before the horse.

The Eastern Apache lived in territory which in the main seems to have been unoccupied by peoples of Pueblo culture, or only peripherally or sporadically utilized by them. The Western Apache habitat, to the contrary, contains prehistoric Pueblo ruins almost throughout. Several recognized ancient Pueblo areas, Upper Gila, Mimbres, Casas Grandes, lie wholly in historic Western Apache territory; and the westernmost extension of both groups was about the same: nearly to the Verde. It may therefore be assumed that when the

Pueblos abandoned their southern territory after having held it thro... periods 2, 3, and in parts through early 4, the Western Apache were th... principal if not sole heirs or dispossessors. Thus the Mimbreño Apache... to have ranged in Spanish times over most of the area of the extinct Mim... and Casas Grandes forms of Pueblo culture. The farthest south of the Pue... at the time of the discovery was in the valley of the Rio Grande about Soco... and valleys, although important to the farming Pueblos, were not typ... Apache habitats, which, apart from the open plains, are often definable... terms of mountain masses.

The Eastern Apache habitat varied a great deal vegetationally. In terms... the Shantz-Zon classification (map 4), it included short grass, tall gra... desert grass, desert savanna, creosote desert shrub, with juniper-piñon a... yellow pine along and in the mountains. Wherever agave was available, it... likely to have furnished a staple food much as among the Western Apach... or sotol in its place.

3–10. SONORA-GILA-YUMA SUBCULTURE TYPE

I retain provisionally the term Sonora-Gila-Yuma for this moiety of Sout... western culture, although its extent from the Santa Barbara Archipelago to... the Sierra Madre makes a broader as well as less cumbersome designation... desirable. The area occupies the southwestern half of the Southwest, with... prevailing Sonoran (Uto-Aztecan) and Yuman speech, as against the Pueblo... languages and Athabascan in the northeastern half.

3. *Fuerte-Yaqui Lowland.* The Cáhita- (Ka'ita-) speaking tribes: Yaqui, Mayo, Tehueco. The area is that of the deltas and lower valleys of the Yaqui, Mayo, Fuerte, and Sinaloa rivers. The early Spanish accounts make both language and customs change definitely, in a northward progress, at the Sinaloa (Petatlán) River. The archaeological remains indicate a marginal or sub-Mexican culture along the Sinaloa coast about as far north as the Mocorito.[13] The archaeology of the northern rivers, probably including the Sinaloa, is much sparser and its types simpler. Cáhita, like Pima, means "no" or "nothing" in the speech in which it occurs, and seems a desirable term to reëstablish, because the ethnic group which it denotes appears to have formed also a distinct cultural unit. The Cáhita, though farmers in rich bottom lands,[14] were politically broken up into independent tribes. The open nature of their lowlands presumably contributed to this condition, as it did among the Yumans of the lower Colorado, in contrast with the isolating, canyonlike character of the Pueblo habitat in which permanent towns grew up. The modern Mayo and Yaqui appear to be two of an unknown number of Cáhita tribes which prospered, grew, and absorbed remnants of less prosperous ones, until they alone retained their identity. They do not adequately represent the former native ethnic situation any more than the modern Navaho and Mescalero-San Carlos-

[13] Sauer, Aztatlán.

[14] It is not clear how preponderantly they lived along the actual bottom lands. There is much unflooded, dry plain in their territory covered with monte or thorn-scrub forest; as well as isolated hills and small ranges. But the Cáhita are obvious lowlanders as compared with Pima and Opata.

White Mountain Apache give a picture of the ethnic line-up of the Apache four centuries ago.

Orozco y Berra's map shows a "shatter belt" of small tribes along the lower Fuerte and Sinaloa. The languages of these tribes, except for that of a body of introduced Pimas, are unknown, other than for statements that this one is similar to that, or distinct—which may mean dialectically—from another. Thomas and Swanton have reviewed the conflicting and inadequate evidence,[15] and have been followed in map 1 in the union of Tehueco, Zuaque, Cinaloa, Ahome, Guasave, etc., into the Tehueco group, as one of three main Cáhita units. The several "tribes" may have been political entities, but all spoke Cáhita, and may not have been more distinct than the modern seven "naciones" or towns of the Yaqui, except in the accident of Spanish terminology. The early visitors speak of a single people from the Petatlán (modern Sinaloa) River to the Yaqui.

The Nio and Zoe, who are on the southern margin, lowland and interior, of the Cáhita area, I have, also following Thomas and Swanton, left as separate groups. Here again we have only statements, not vocabularies, and it seems quite possible that they also represented only dialectic variants. The ultimate disposition of their relationships will probably depend on the decision yet to be made concerning the speech of Sinaloa south of the Cáhita, where "Mexican" (Nahua) has usually been shown by the maps, but with reasons for disbelief which are reviewed below in the discussion of the Sinaloa area.

The Orozco and Thomas-Swanton Tepahue area on the lower middle Mayo I have left so designated. The stretch immediately above, from San Bernardo on, is held today by the Huarejía, who speak a dialect about equally distinct from Tarahumar and Cáhita,[16] and who evidently correspond in name, though not so exactly in situation, to Orozco's Varohio or Varogio, who are also mentioned as related to the Tarahumar.[17]

4. *Sonora.* This term is used in the sense of the old province of Sonora, that is, the territory drained by the middle and upper courses of the Mayo, Yaqui, Sonora, Altar, and Gila rivers, and containing two ethnic groups, the Pima and the Opata. The Pima lived in the foothills, the Opata (O'pata) in mountain valleys to or nearly to the crest of the Sierra Madre. While both speak languages of the Sonoran division of Uto-Aztecan, these languages belong to quite different branches of Sonoran. Opata affiliates with Cáhita and Tarahumar, Pima with Tepehuán to the south.[18] The geographic dispersal of these

[15] BAE–B 44, esp. pp. 11–17.

[16] Field record by myself at San Bernardo in 1930. See UC–IA no. 8:13, 19, 1934.

[17] Orozco y Berra, 326. His map shows them in the Sierra Madre of Chihuahua in upper Fuerte drainage, which is an error.

[18] This whole area is given rather differently by Sauer in The Distribution of Aboriginal Tribes and Languages in Northwest Mexico, UC–IA no. 5, 1934, with map. As Cáhita proper he recognizes Yaqui, Mayo, and Tehueco, Cinaloa, Zuaque on the Fuerte. On the Sinaloa the Ocoroni and Nio constituted small foreign enclaves. The Mocorito on the river of that name probably belonged with the Tahue of central Sinaloa. The coastal fishing tribes from just south of the mouth of the Mayo to include the mouth of the Culiacán he calls collectively Guasave: they included the Ahome of the Fuerte. These people could not farm their alkaline flats and sand dunes. The Spaniards distinguished them in speech from the Cáhita; Sauer tends to throw Cáhita, Guasave, and Tahue into one closer linguistic subdivision; for which, certainly so far as the Tahue are concerned, there seems to me no warrant (Uto-Aztecan

two branches gives rise to an interesting ethnohistorical problem, the full setting and import of which[19] are mentioned below in the section on Mexico areas.

5. *Northern Sierra Madre:* The Tarahumar. The position of this group uncertain, but chiefly as between the Sonora-Gila-Yuman and the Mexico group of cultures. The Pueblo form of Southwestern culture seems scarce to be in question in their relations, since the Tarahumar territory lies main south of the known range of the Casas Grandes type of Pueblo remains. Judg ment on affiliations is rendered difficult by the hybridization of all surviving native Mexican cultures with Spanish culture, plus secondary local differe tiations in retention and emphasis of elements. However, there is little reason to believe that the Tarahumar were markedly different from their speech kinsmen the Opata and Cáhita. At any rate, what is known of them shows striking excess of elements of Central Mexican culture. They are therefore provisionally classed as within the Southwest. The habitat in which they main is one of deep, hot clefts in a rugged, pine-clad cordilleran mass; but they formerly extended farther east into the lower, open Chihuahua plateau

6. *Sonora Coast:* The Serian tribes. These people are sharply marked off from their neighbors by being nonagricultural. This fact rests on an environmental limitation, their territory being almost rainless, and at the same time not reached regularly by flow in the rivers which descend into the coastal plain from the Sonoran highland. The next stream south, the Yaqui, does flow to the sea, and is occupied by the farming Cáhita.[21] The question arises

Languages of Mexico, UC–IA no. 8:15, 17, 1934). North of the Tahue he includes with them the Comanito of the upper branches of the Mocorito, the Zoe, and the Tubar of the Urique fork of the Fuerte. The Tepahue, Conicari, Macoyahui, and Baciroa, above the Mayo, he affiliates closely with the Cáhita proper. They have at any rate absorbed into the modern Mayo; were probably not very different in speech; but, as inhabitants of streams flowing through hill country, were presumably distinct from the bottom-land Mayo culturally and nationally. Above these, he unites into another group the Varohío, Chínipa, Guasapar, and probably Témori in the canyon country of the Mayo and the Otero branch of the Fuerte, with the Chínipa culturally dominant. They were later displaced or assimilated by the Tarahumar. The Huite on the Fuerte between the Tubar and the Cinaloa are unplaced. In brief, the Cáhita, on the regularly flooded bottom lands of the lower Yaqui, Mayo, and Fuerte, were the distinctive people of the area. On the Sinaloa, and above the Cáhita on the three larger rivers, but below the high Sierra Madre, were a dozen or more territorially smaller nations on whose speech and affiliations we have various Spanish statements, but no specimens, and who have become extinct or submerged; with the exception of the Huarojío, Varohío, whose surviving language is of the Cáhita-Tarahumar-Opata group of Sonoran Uto-Aztecan but neither Cáhita nor Tarahumar. Finally, there were the coastal Ahome-Guasave, whose subsistence relation to the Cáhita must have been much like that of the Seri to the Pima, though there is nothing to indicate that they were non-Sonoran.

Sauer has been repeatedly on the ground, as Orozco, Thomas, and Swanton have not. He has also adduced new documentary sources. However revolutionary his conclusions at times, they are therefore always entitled to most serious consideration.

[19] Discussed in Sauer's and my papers in UC–IA just cited. See also the next footnote for Pima, Opata, and Cáhita cultural relations.

[20] W. C. Bennett and R. M. Zingg have published an excellent modern monograph, The Tarahumara (Univ. Chicago, 1935), based on field residence. Their analysis of the culture makes it non-Pueblo, "Sonoran" or Northwest Mexican, built up on a Basket Maker-like foundation. Ceremonially its relations seem mostly with the South; otherwise, similarities are marked also with Cáhita, Opata, and Pima. This is an important study, in detail and conclusions. Bennett and Zingg also (p. 392) modify Beals's and my culture grouping: the Opata are classed with the Cáhita, not with the Pima. This accords with speech; but Zingg's manuscript trait lists will have to be published before the evidence can be judged.

[21] There is also somewhat more rain in the lower Yaqui area.

whether the Seri group of tribes represent a populational remnant from pre-agricultural times, a former farming people which was pushed into the area and perforce gave up farming, or a nonfarming element that came in to occupy the coastal desert which was worthless to the surrounding agricultural tribes. The last of these possibilities is favored by their situation on the narrowest part of the Gulf of California and by the fact that the peninsular tribes across the Gulf were also nonfarming. In terms of mere geography, therefore, a derivation of the Seri from peninsular California would be the simplest explanation of the gross facts. Actually, the evidence is not in hand to settle the question. I have discussed the pertinent available data elsewhere;[22] and will only add here that there seems to be little to substantiate McGee's view of extreme uniqueness of the Seri. They certainly resembled the peninsular Californians greatly in level of culture, and appear to show numerous specific resemblances in culture content to the Sonora and northwestern Arizona areas.

This area, then, may or may not have to be classed ultimately with the Peninsular Californian one.

7. *Northwest Arizona:* Yavapai, Walapai, Havasupai. These three tribes are closely similar in speech, forming a distinct subgroup of the Yuman family, with closest affiliations, apparently, with the Akwa'ala-Paipai of northern peninsular California. The Walapai consist of seven subtribes or bands.[23] The Yavapai, according to Gifford,[24] comprise three divisions of at least near-tribal rank: western, southeastern, northeastern. These are again divided into localized bands, of which 2, 2, 6 respectively are enumerated. These Yavapai "bands" evidently correspond to the Walapai "subtribes." The Havasupai look like a Walapai band or subtribe which has acquired somewhat greater ethnic, cultural, and historic independence.

All three tribes farmed where they could. This, however, they did sporadically and insignificantly, the Havasupai excepted. Even the Havasupai lived half the year out of the canyon in which they farmed, and their life during this winter half was scarcely distinguishable from that of the Walapai and Yavapai. The culture shows many resemblances to that of Peninsular California (including the Diegueño) as well as to that of the Great Basin Shoshoneans, especially the Southern Paiute across the great chasm of the Colorado. There are also a good many specific resemblances to the Seri. We have in this group, then, a culture related primarily to the nonfarming desert cultures of the region. Upon this basis there have been built superficial local differentiations: Havasupai semisystematic agriculture and use of a few masks adopted from the Hopi, for instance; matrilinear sibs which the Southeastern Yavapai share with the Apache; Mohave song cycles and mourning rites taken over in the American period by the Walapai. In each of these, the influence of the import remains local, and appears to be rather recent. Spier,[25]

[22] The Seri, Southwest Museum Papers, no. 6, 1931.

[23] Walapai Ethnography (Contrib. Lab. Anthr., 1), AAA–M 42, 1935.

[24] Gifford, The Southeastern Yavapai, UC–PAAE 29:177–252, 1932; Northeastern and Western Yavapai, UC–PAAE 34:247–354, 1936.

[25] AA 31:213–222, 1929.

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even before the Walapai and Yavapai data became available, neatly analyze Havasupai culture much along these lines, pointing out the essential smalline and overlay quality of the Pueblo ingredient, and aligning the culture pr marily with that of the Great Basin.

The resemblance of Northwest Arizona to Great Basin culture lies n only in considerable specific content, but especially in similar meagerness o defined patterns.

In land form, the Northwest Arizona area is not a unit. The line betwee the Basin-and-Range and Colorado Plateaus areas strikes diagonally through Walapai and Yavapai territory. Almost coincident is the line that separate the vegetational areas of creosote bush and juniper-piñon. However, the large half of the habitat seems to lie in Basin-and-Range and creosote bush, and the smaller remainder lies mostly on the lower levels of the Plateau where the juniper struggles near its lower limits. The environmental fit of the fact that the area belongs in the Sonora-Gila-Yuma half of the cultural Southwest is therefore closer than the sharp lines on the map would indicate.

8. *Lower Colorado River:* The "river Yuman" tribes; in order upstream the Cocopa, Halyikwamai, Kohuana, Yuma, Halchidhoma, Mohave; plus the Maricopa on the Gila. The first three belong to one dialect group of Yuman, the last four to another. The Maricopa have been on the Gila since before 1700. The Halyikwamai, Kohuana, and Halchidhoma took refuge with the Mari copa during the nineteenth century and have lost their tribal identity among them.[28]

The river culture is specialized from that of the Yuman tribes in the desert and mountains on both sides. It is characterized by consequential agriculture depending wholly on river bottom-land flooding, not at all on rains or artificial irrigation; by pottery which is a direct descendant of the prehistoric red-on-buff ware of the Middle Gila; by a lack of interest in many aspects of material culture and resulting degeneration, as in basketry; and by a religion which largely suppressed visible ritual and symbolism and substituted emphasis on song acquired by quasi-shamanistic dreaming, or pseudo dreaming, within a

[28] Spier, Yuman Tribes of the Gila River (Univ. Chicago, 1933), has clarified the picture, especially for the river Yumans off the Colorado. His identification of a new tribe, the Kavelchadhom, brings the number of Yuman tribes and tribal remnants on the Gila up to five, instead of the Maricopa alone, as long assumed. These are: (1) Maricopa, between the Salt River and Gila Bend in the eighteenth century, and perhaps off the Colorado already in Alarcón's time, 1540; (2) Kavelchadhom, perhaps a Halchidhoma subtribe and at any rate identical in speech; on the Gila from 30 to 50 miles below Gila Bend in the eighteenth century; joined the Maricopa between 1838 and 1852; (3) Halchidhoma, joined 1833–1838; (4) Kohuana, and (5) Halyikwamai, joined 1838–1839. After about 1800, and therefore when the four other tribes merged among them, the Maricopa were living above instead of below the mouth of the Salt. In short, at the opening of the historic record there were at least six Yuman tribes on the Colorado, two on the Gila (and these evidently recently from the larger stream). In 1840 there were three on the Colorado, five merged remnants on the Gila. Obviously, the Colorado was the breeding ground, from which the losers in war were expelled, following the Maricopa lead up the tributary. Speech classification, on the basis of my own vocabularies: Maricopa, Kavelchadhom, Halchidhoma are very close, and similar also to Yuma, somewhat less so to Mohave. Kohuana and Halyikwamai, however, are essentially Cocopa dialects, and Cocopa differs thoroughly from Maricopa-Yuma-Mohave, showing definite Akwa'ala-Diegueño resemblances instead.

highly conventionalized mythological pattern. As Herzog has pointed out, the river Yuman music also follows a highly specialized style.[27]

Certain specific traits are shared by the river Yumans and the Gila Pima. I have listed these elsewhere.[28] Some of the common traits are almost certainly the result of interchange within Arizona, and most may prove to be so; but others may extend through the various Pima groups of Sonora. This problem, and the involved one of the relation of river Yuman to "Sonoran" (Pima-Opata) culture, depend for solution on fuller knowledge of the Pima in Mexico. On the whole, river Yuman culture gives the impression of being more specialized than Piman, though quite likely no fuller in content; and therefore of being largely due to a development on the spot.

The Shoshonean Chemehuevi have been considerably influenced by the Mohave on the side of religion, but apparently without appreciable effect on their economic life. It is not clear whether or how far this influence antedates the Caucasian period. It may well be that the somewhat hazy distinction between the Chemehuevi and the other Southern Paiute rests essentially on this influence; in other words, that the term Chemehuevi denotes those Southern Paiute who have been affected by the Mohave.[29]

9. *Peninsular California.* This area comprises all the groups of the peninsula and somewhat beyond northward, namely, Pericú, Waicura and subdivisions, all the Cochimí, Akwa'ala[30] or Paipai, Kiliwa or Kilyuwa,[31] Diegueño, and

[27] The Yuman Musical Style, JAFL 41:183–231, 1928.

[28] The Seri, Southwest Museum Papers, no. 6:44–47, 1931.
Spier, Cultural Relations of the Gila River and Lower Colorado Tribes, YU–PA no. 3, 1936, gives a much longer list of traits. He affiliates river Yuman with Gila Pima and Arizona Papago culture, as against that of the Yumans and Athabascans of the "Arizona Plateau." This position seems sound for the United States; but it is incomplete through ignoring the long range of the Pima in Sonora, and the fact that the river Yumans and Cáhita seem to have shared much more than flood bottom-land agriculture: for instance, simple technology, loose organization, meagerness of rituals, warlikeness, and unrest. Gifford, AA 38:679–682, 1936, takes issue with Spier concerning the closeness of river Yuman and Gila Piman culture. The difference of opinion seems to be one of taxonomic preference; they agree that the Maricopa relate culturally to the Colorado Yumans more than to the Gila Pima. Underlying Spier's alignment of the Arizona Plateau Yumans with the Apache and Basin Shoshoneans, as against the river Yumans and Pima, seems to be the consideration that the former do not and the latter do farm regularly; and underlying this, in turn, is of course the ecology of the two regions. The question is, Have we here two "cultures," or two facies extending through a series of cultures? Descriptively, Spier may be right; though then the Seri, Diegueño, and Cochimí should presumably be included in his first group, the Cáhita and others in the second. Historically it may be questioned whether the culture development was so simple that it can be resolved into two streams differing essentially according as habitat forbade or allowed farming, important though this factor was.

[29] Isabel Kelly, AA 36:548–560, 1934, distinguishes fifteen Southern Paiute bands. Much the largest of these territorially is no. 14, the Las Vegas band, west of the Colorado from where this turns to flow south. From out of this band the "Chemehuevi" (band no. 15) pushed south to about 33½° north latitude before 1850. "Chemehuevi" refers to the group called Chemehuevi by the Americans; the Mohave, and following them Spanish authors like Garcés, call all Southern Paiute known to them Chemehuevi, at least as far northeast as the Moapa (no. 13) and Shivwits (no. 6).

[30] Gifford and Lowie, UC–PAAE 23:339–352, 1928. Drucker has obtained an Akwa'ala and a Mexican Diegueño element list, which will be published in the Culture Element Distributions series in UC–AR.

[31] Peveril Meigs, 3d, The Kiliwa Indians of Lower California, UC–IA no. 15, 1939.

Kamia; possibly also the Seri, as discussed under Sonora Coast, and fragmen of river Yuman tribes extruded into the desert. All, except in a measure th Kamia, were almost perforce nonagricultural; but the northern groups mad simple buff-red pottery. Pitahaya and other cactus fruit, and locally agave were the only abundant food supply, and that mainly seasonal. Alongsho fish and mollusks must have been important. Subsistence through most of th desert peninsula was meager, and the population was compelled to remai scattered, even after mission reduction. In the north, from the San Pedro Má tir massif to the Cuyamacas, altitude and fog allowed some amelioration o food conditions; and the same holds in the extreme south, about Cape San Lucas, where the maps show a subhumid vegetation. The scant accounts of th Pericú at the southern tip, however, do not seem to differentiate them cu turally much from the Waicura and Cochimí of the body of the peninsula. In the north, the level of the culture seems to have been raised more than the type was changed. Certain religious features of the Diegueño, such as the Chungichnish Datura cult, which they share with the Shoshoneans of southern American California, are at least in part, and probably mainly, post-Cauca sian imports.[32] Kamia agriculture and other river Yuman resemblances also look like rather recent additions to an eastern Diegueño basis of culture.[33]

10. *Southern California:* Shoshoneans and Chumash south of the Tehachapi The Diegueño probably belong rather to the peninsula. The Southern Cali fornia area is nonagricultural throughout, and ceramic only at its southeast ern margin. The subsistence basis is Californian, many of the elements of culture Southwestern. Some of these, like the sand-painting altar, are of Pueblo rather than Sonora-Yuma type, and may be the result of ancient radiations from the former people across the territory of the latter. There is a definite climax in this area among coast and island Gabrielino and Chumash, whose culture was semimaritime, with seagoing plank canoes. Although this climax culture was likely to have been further developed locally once it had taken root on the Santa Barbara Islands, its spontaneous origin on the main land coast and growth to the point where it could reach the islands are hard to understand on the basis of either a Californian or a Sonora-Yuman culture basis. There is therefore a possibility that its impetus came in part either from the Northwest Coast or from across the Pacific, to both of which regions there are sporadic but fairly specific parallels: harpoon, canoe, round shell fish hooks, psychological cosmogony. The double-bladed paddle and spear thrower of the area might possibly be construed as taken over from Aleuts imported by Russian sea-otter hunters in the course of the Mission period; but the abundant archaeological evidence shows that this puzzling local climax culture as

[32] Waterman, Religious Practices of the Diegueño Indians, UC–PAAE 8:271–358, 1910. These features are found chiefly among the Diegueño of the coast and mountains, not of the desert side of the mountains.

[33] Gifford, The Kamia of Imperial Valley, BAE–B 97, 1931; esp. pp. 1–3, 83–86.

Philip Drucker, who in 1935 visited the southern California tribes for an element survey, looks upon Diegueño territory as extending east to the Yuma, and the "Kamia" as those families or lineages of the Desert Diegueño who from time to time went to live among the Yuma. See Drucker, CED:V—Southern California, AR 1, no. 1, 1937.

a whole far antedates any Caucasian contacts. Of late, archaeological data have at last begun to throw a little light on part of its development.[34]

History

The prehistory of the Pueblo culture, attacked for a long time with little conception of historic problem and less of method, was finally synthesized by Kidder,[35] and accords well with the close ecological relationship of the Pueblo and Great Basin areas. Pueblo culture grew by continuous transitions out of a Basket Maker culture similar to that of the ancient and modern Basin, but incipiently agricultural though still potteryless. Most of the Basket Maker remains have to date been found in the northwestern part of the main range of historic Pueblo sites, toward its Colorado drainage and Great Basin side. Pueblo culture itself, in an early period, spread temporarily into the Basin cultural area[36] through parts of Utah and southern Nevada.[37] These relations are discussed again in connection with the Great Basin. Coincident with the recession from this northwesterly spread of Pueblo culture came a concentration into large towns and a flowering of the culture; and, more or less associated with this, the Puebloid development of Casas Grandes in northern Chihuahua. Thereafter, Pueblo culture contracted in range; and it varied or specialized, rather than grew, in its forms and content. This process continued through the historic period, in which there also occurred an assimilation of Caucasian culture, most obvious in economics and technology, but far from negligible on the nonmaterial side.

In summary, the sagebrush-juniper area did once harbor a relatively uniform culture, but after this began to differentiate into cultures of Great Basin

[34] Olson, Chumash Prehistory, UC–PAAE 28:1–21, 1930 (stratigraphic, two periods, plus a transition); David Rogers, Prehistoric Man of the Santa Barbara Coast (Santa Barbara, 1929) (three successive cultures). The documentation for Rogers' distinctive middle period is insufficient. Olson finds rude metates (plus some mortars) and charmstones characteristic of his earlier period; mortars, circular fishhooks, and perhaps perforated stones, of the later. The earliest deposits yet discovered on the Chumash islands are similar in type to the transitional rather than to the characteristic early remains of the mainland. Two recent papers by R. F. Heizer are important: on the spear thrower in American Antiquity, 4:137–141, 1938, and on the plank canoe in Ethnological Studies (Göteborg), 7:193–227, 1938.

[35] Southwestern Archaeology, 1924.

[36] Even to the Mohave Sink region of southern California, according to M. J. Rogers, San Diego Museum, Archaeology, 1:1–13, 1929.

[37] It is doubtful how far the "Pueblo" culture north and west of the Colorado may not be Puebloid rather than true Pueblo. It contains genuine Pueblo traits, but lacks others, and possesses specific non-Pueblo features. The approach has been from the side of knowledge of the classical Pueblos, with a natural tendency to construe as Pueblo any culture which still showed definite Pueblo elements. Had the approach been from another side, it is conceivable that these northwestern cultures would have been described as non-Pueblo with a greater or less degree of Pueblo influencing. Noel Morss, in the Summary of his recent Ancient Culture of the Fremont River in [South Central] Utah, PM–P 12, no. 3, 1931, shows this rather clearly: Pueblo maize and pottery present; Pueblo masonry, kivas, cotton, turkey, plaited (twilled) basketry absent; non-Pueblo cists, moccasins, fur cloth, coiled basketry, snares, figurines, anthropomorphic pictographs well developed or abundant. On a broad view, does such a culture deserve to be called Pueblo?

J. H. Steward, Archaeological Problems of the Northern Periphery of the Southwest, Mus. of Northern Ariz. Bull. no. 5, Flagstaff, 1933, makes such Southwest culture as entered Utah mainly Basket Maker 3–Pueblo 1. The Northern Periphery mainly or wholly lacked the grooved ax, turkey, cotton, sandals, and a whole series of Pueblo pottery forms and decoration techniques. Steward maps four areas (five with 1A, 1B) of this Northern Pueblo Periphery in and about Utah.

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and Pueblo type, the latter shrank back into a limited portion of the area a[n] has been tenaciously on the defensive since. It is notorious that the Pueblos a[re] nonpropagandist and that their exceptionally high culture has left little spe[-] cific impress upon others.

The question arises, What was it that caused the differentiation of incipien[t] Pueblo culture from the Basket Maker-Great Basin basis? On the one han[d] gradual development of pottery, masonry, and community towns on the spo[t] has been followed out in such detail by Morris, Prudden, and others, as t[o] give a strong impression of a spontaneous, purely local growth.[38] On the othe[r] hand, there are a series of facts pointing to irradiations from the south. Maize of flint variety, and squash, both almost surely of Mexican origin, appear i[n] Basket Maker period 2, pottery in period 3; slab construction with masonry augmentation arises in Pueblo period 1; communal houses or small towns o[f] masonry, in Pueblo period 2.[39] These successive appearances lend themselves to the interpretation of continuing or repeated influences from the south which gradually became effective in crystallizing what we know as Pueblo culture. A special injection is likely to have occurred at the beginning of Pueblo period 1, when a broad-headed population, which has persisted, began to replace the long-headed Basket Makers, whose head type continues among the recent Basin Shoshoneans. In any event, the explanation of a foreign southern origin of the stimulus or ferment of Pueblo culture also helps to explain the anomaly of two quite different culture types—Pueblo and Basin—within the same natural area.

Why, however, these have persisted side by side for at least a thousand and perhaps two thousand years without assimilation or without the replacing of one by the other has not been altogether clear. One is inclined to look for the cause as lying in something in the character of Pueblo culture itself, in those factors which early gave it its exceptionally nonexpansive, self-centered quality. These factors in turn seem to be two: one cultural, the other natural. The cultural element is no doubt the relatively high degree to which Pueblo culture even in early times already had its basis in farming subsistence. On account of the habitus of maize, this necessarily means an ultimate southern origin; though whether the importation was due more to diffusion of the art of agriculture or to populational movements, we cannot at present say. The natural factor is the limitation which climate puts upon maize growing. This is illustrated in maps 25 and 26, and discussed further in Section XIII, under "Climate." In essence, it appears, Pueblo agriculture, and therefore the Pueblo type of culture, were prevented from spreading westward either by downright aridity or, where there was enough rainfall, by the concentration of this into winter; northward, by decreasing temperature expressed specifically in too short a growing season for maize to mature between the last frosts of spring and the first of fall.[40] Where the Pueblos live today, they can depend on corn

[38] Bibliography in Kidder, Southwestern Archaeology.

[39] Kidder, 118–135; also Science, 66:489–491, 1927; Roberts, BAE–B 92:2–7, 1929, 100: 2–5, 1931, 111:2–27, 1932; Kidder, pt. 3, Discussion, pp. 589 ff. of Kidder and Shepard, The Pottery of Pecos, vol. 2, 1936.

[40] Toward the east, a limiting climatic factor is not clear.

with reasonable safety though with little margin. Parts of the areas which they once occupied are also farmable for them; but others, like most of their former holdings in Utah and Nevada, must have afforded an extremely precarious subsistence at best. In short, sagebrush and juniper thrive about equally well in the Basin and in the Pueblo country; maize does not, even with the most careful nursing. Natural vegetation is not an index of the determining factors of a culture like that of the Pueblo. The Pueblo culture did push its southern-derived subsistence basis, which was integral to its nature, as far north as was possible; at times beyond the limits of success. In its basis, it was and remained definitely a marginal culture. The wonder is that upon this marginal basis it succeeded in erecting so rich a social and religious superstructure of climax growth.

Besides the early and rather meager flow into Utah and Nevada, and perhaps some sporadic efforts to penetrate the Plains, only one notable Pueblo expansion is yet authenticated: that which brought polychrome pottery into the Middle Gila region of the Sonora-Yuman area during the Great and Late periods (Pueblo periods 3 and 4). Here the Pueblo invasion found red-on-buff bichrome ceramics established, continued alongside them for a while, but retreated or died out again before the historic period, leaving red-on-buff somewhat altered but in possession of the field.[41] In the local history of the Gila region, this Pueblo or Puebloid invasion was no doubt a momentous event. But its transience evidences the firmness with which the Sonora-Gila-Yuman area held its line against the Pueblo. Reciprocally, the eastern limit of red-on-buff ware about Solomonsville corresponds closely with the boundary of the creosote bush or succulent desert (maps 3, 4, 5). The Verde drainage, again, is mostly juniper, and its pottery, except near the mouth of the Verde, is Pueblo.

Kidder suggests the prehistoric Casas Grandes River culture as a Pueblo proliferation in period 3 (or 4); but so little is known of this old north Chihuahuan culture—and nothing beyond it—that it might conceivably prove to be the result of the impingement on Pueblo culture of northward radiations of some Mexican development. Its pottery is well differentiated from all other local Pueblo styles; its architecture, from all but that of the Mimbres and Gila.[42]

In the historic period, Pueblo contacts with the Plains were largely through the uppermost group on the Rio Grande, the Tiwa, where Taos shows much Plains influence. It is significant that the nearer Plains tribes—Comanche, Kiowa, Southern Arapaho, and Cheyenne—show very few Pueblo traits. The

[41] E. F. Schmidt, Proc. Nat. Acad. Sci., 13:291–298, 1927; AMNH–AP 30:247–302, 1928; H. S. Gladwin, Southwest Museum Papers, no. 2, 1928; the same (no author given, privately printed for the Medallion, Pasadena, later, Gila Pueblo, Globe), 1–72, 1929, 135–161, no date; Kroeber, review of first and third, AA 31:513–516, 1929; F. M. Hawley, AA 32:522–536, 1930; Sauer and Brand, UC–PG 3:415–448, 1930.

Excavations at Snaketown, Medallion Papers, nos. 25, 26, 1937, by H. S. Gladwin, E. W. Haury, E. B. Sayles, N. Gladwin (with full bibliog.), summarizes knowledge of Hohokam culture and shows how much has been learned since the foregoing citations were written.

[42] H. A. Carey, An Analysis of Northwestern Chihuahuan Culture, AA 33:325–374, 1931, points out Mexican resemblances, but aligns the culture primarily within the Southwest. See also D. D. Brand, The Distribution of Pottery Types in Northwest Mexico, AA 37:287–305, 1935.

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Jicarilla and Mescalero Apache are Southwestern, by general estimation, but with a non-Pueblo basis of life—open plainsmen and buffalo hunters. This does not mean that they were Plains tribes in the nineteenth-century sense but more likely that they were dwellers at the foot of the Rockies and southern ranges who roamed into the plains—members of a contingent of which a part later went into the making of the Plains tribes as we know them. The Kiowa Apache would be a band that finally stayed in the plains. Somewhat similarly the Kiowa, on the basis of their speech, apparently are a group that anciently broke away from the Tanoans of the Rio Grande—somewhat like the Comanche from the Shoshone much later on. These movements illustrate the greater vigor of late Plains over that of Southwestern culture.

VIII. CULTURE AREAS: INTERMEDIATE AND INTERMOUNTAIN AREAS

1. GREAT BASIN

CALIFORNIA has generally been reckoned a distinct area ever since American culture began to be classified geographically; but the Great Basin[1] has been bandied about. It has frequently been included with the interior Columbia and Fraser drainages in a "Plateau area," the concept of which before long came to be unduly colored by the culture of the Fraser Salish, the only tribes then intensively monographed. Otis Mason recognized a separate Interior Basin. Wissler united the Basin with California into a Wild Seed area in his food-area classification. This is undoubtedly correct so far as subsistence is concerned, and was followed by myself when I constituted a California-Great Basin area of general culture.[2] In his culture-area classification, however, Wissler departs from this solid basis and dissolves the Basin away, assigning its territory to the adjacent Southwest, California, Plateau, and Plains, most largely to the last named. His schematic boundaries diminish the arbitrariness of this division, which would appear starkly on a map following physiographic or tribal features. No one seems ever to have doubted the close internal cultural unity of the Shoshonean Basin tribes. It is the meagerness of their culture on levels above that of mere subsistence which has made it difficult to specify their affinities.

The union of the Basin with the Columbia-Fraser drainage into a Plateau area seems to rest on the recognition of a negative fact: the absence of nearly all the more intensive culture manifestations of the coast on one side and of the plains on the other. This, however, still leaves the Columbia-Fraser a hinterland to the Northwest Coast, the Basin to California. Also, food habits are built respectively about salmon taking and bulb digging and about seed gathering. The positive similarities of the Basin and Columbia-Fraser areas appear to be rather few. Their relationship is one of level or saturation stage rather than of specific content. Their union into a larger Plateau area therefore leads to little opportunity for historic utilization.

Wissler's inclusion of all the easterly Basin tribes in the Plains area has validity for the last century or so, but would misrepresent earlier conditions. It is true that, viewed against the Teton and Blackfoot, the recent Ute and Bannock cultures look like peripherally diminished Plains cultures. However, this interpretation ignores the recency of the Plains culture represented in our museum collections and in many modern monographs; and it also sees the Plains focus in the far western plains, where relations with the eastern Basin would be strongest. The view here developed is that the eastern Basin and

[1] In the Great Basin there is here included the part of the Colorado River drainage which lies outside the Southwest area. The plant cover is the same, though high mountain masses with pine forests are somewhat more extensive in the upper Colorado drainage than in the Basin proper. "Great Basin-Upper Colorado" would therefore be the more exactly descriptive term; but it is cumbersome and not wholly accurate, since the Little Colorado and San Juan affluents of the Colorado belong in the Pueblo Southwest area.

[2] UC–PAAE 17:151–169, 1920. See also Lowie, UC–PAAE 20:145–156, 1923.

Rocky Mountains areas indeed had pre-Caucasian relations with the west... Plains, but as influencing perhaps more than influenced. This point will... referred to more fully when the Plains culture is discussed.

As for the relation to California, it is clear that the basic subsistence... of the Basin is similar, and that there are also close relationships in baske... and dwellings. It is to be noted, however, that climate and, in the main, ve... tation change sharply as soon as the Sierra Nevada is crossed; and in b... these matters the Basin and most of the Southwest belong together, as all... maps show. Some presumption is therefore at once raised that the Basin... longs with the Southwest in culture also. This connection has been disgui... by the hitherto prevalent habit of thinking of the Southwest in terms of... specialized Pueblo phase. As a matter of fact there is a large amount of ev... dence pointing to close relations of Southwest and Basin. The first Bask... Maker discoveries were recognized as showing Californian similarities... the standardized Southwestern scheme of horizons, the hypothetical, pr... agricultural stage, Basket Maker 1, is formulated[3] as a seed-gathering, bask... using culture of general Basin-like type. The Lovelock Cave of central Nevada... in the heart of the Great Basin, yields in its lowest stratum an atlatl cultur... which M. R. Harrington reckons as akin to Basket Maker.[4] The upper strat... are on the whole more similar to recent California. Early Pueblo culture has... been traced by Judd northward in western Utah to the Idaho line, and by... Harrington westward across southern Nevada to the California boundary... This means that before Pueblo culture attained its full specialization it ac... tually held a large part of the Basin. As specialization increased, territorial... contraction took place, and tribes of Basin type of culture flowed back into... the vacated area. Reciprocal relations must, however, have been fairly active... Spier's study of the Havasupai,[6] the first monograph on a non-Pueblo tribe in... the general Pueblo range (except for the Navaho, who are Puebloized super... ficially), reveals a culture far more Basin than Pueblo in general habitus. The... same is even clearer for the Walapai.

In spite, then, of the striking differences between cultures like those of the... modern Paiutes and Pueblos, their remote antecedents were closely similar if... not substantially common, in a common environment mainly of sagebrush-... juniper semidesert. Within the environment, the boundary between Basin and... Pueblo culture has fluctuated, and that between Basin and sub-Pueblo has... always remained ill defined.

In the light of this, the relation of California to the Basin, which cannot be... denied, is best viewed as resting on an early kinship of Californian and primi... tive Basin-Southwest cultures. In part, influences flowed from the latter into... California, resulting in growths like that of Yokuts-Mono pottery.[7] In part,

[3] Kidder, Science, 66:489–491, 1927.

[4] UC–PAAE 25:1–183, 1929. Significant affinities must not be stretched into an identification. The Lovelock culture is *not* classical Arizona-New Mexico Basket Maker culture.

[5] Judd, bibliography 1917–1920 as cited in Kidder, Southwestern Archaeology; M. R. Harrington, AA, 29:262–277, 1927; MAIHF–IN 5:235–240, 1928 (map).

[6] AMNH–AP 29:81–392, 1928; also AA 31:213–222, 1929.

[7] UC–PAAE 23:382, 1928; Gayton, UC–PAAE 24:239–255, 1929.

perhaps, reciprocal influences flowed from California into the Basin, as spe... cific Pueblo influences retracted there. In the main, however, the California... and Basin cultures are alike because they have not risen very far above their... early, closely related forms. Where there has been such rise or divergence, as... in the Californian climax area, none of the secondary or specialized manifesta... tions—Kuksu cult, Pomo basketry—has crossed the Sierra Nevada, even in... fragments. The Great Basin is a hinterland to California as the Columbia-... Fraser drainage is to the Northwest Coast, in the sense that both have tended... to preserve an early phase of culture which has advanced to specialization in... the coastal areas. The Basin is not a hinterland to California in the full sense... that Columbia-Fraser is to the Northwest, because it has not been influenced... by the coastal culture to the same degree.

The position of the Bannock and the Lemhi Shoshone is not clear. They live in Snake and therefore Columbia[8] drainage, but in an area of sagebrush-juniper plant cover, except for pine in the higher Salmon River Mountains (map 4). They subsist to some degree on salmon, but their speech is that of the Great Basin. They are here tentatively classified contrary to physiography, and according to their ecological and linguistic relations, as constituting a Basin subarea.

Another subarea is that of the Klamath-Modoc and Achomawi-Atsugewi, who live in Northwest Coast and Californian drainage, but seem largely Great Basin in culture. This classification of them is given a certain historic depth by the occurrence, in the Lovelock Cave deposits of central Nevada, of flexible twined basketry of modern Klamath-Achomawi type in the lowest or atlatl-bearing strata.[9] The nineteenth century brought into the Klamath Lakes region an importation of Columbia and Plains traits. These came from the north, by way of the Deschutes River, and represent an extension of Plains culture in its final exuberant horse phase. Achomawi territory is partly sagebrush-juniper, partly pine; Klamath, pine forest surrounding a characterizing area of marsh (map 4). Both territories lie high,[10] at about 4000 feet elevation, and while they have nearly complete sea drainage, they are situated inland of the Sierra-Cascades axis, which here is somewhat broken down. Physiographically, both territories are reckoned as in the Basin, that is, Basin-and-Range province (map 7); and climatically they are cool and still within humid limits (map 24). The Achomawi-Atsugewi subtribes segregate into an eastern and a western division, which C. Hart Merriam[11] and Kniffen[12] have shown to differ somewhat in culture, as well as in the plant cover of their habitats. The westernmost Achomawi group, the Madesi,[13] seem to belong culturally with their neighbors, the Wintu, who are clearly Californian. The Northeastern or Moun-

[8] Boas, works cited in Tribal Map bibliography (p. 9 above), 1927, 1928, has only the Bannock in Snake drainage before 1800, all the Shoshone in this latitude being west of the continental watershed. This seems very doubtful.

[9] UC–PAAE 25:26, 1929.

[10] L. Spier, Klamath Ethnography, UC–PAAE 30, 1930.

[11] Classification and Distribution of Pit River Indian Tribes, SI–MC 78, no. 3, 1926 (publ. 2874).

[12] Achomawi Geography, UC–PAAE 23:297–332, 1928.

[13] C. Hart Merriam, An-nik-a-del, 1928.

tain Maidu should perhaps be classed in the Klamath Lakes-Pit River area. Theirs is also a 4000-foot habitat, as compared with sea level to 3000 feet for the other Maidu. Culturally they agree at many points with the Achomawi, as in their basketry and lack of ritual organization. The Mountain Maidu as well as western Achomawi-Atsugewi can probably be included with about equal justice in the California and the Great Basin cultures. I reckon them here with the Great Basin in order to draw attention to their status, and to break down the tradition, to which I have myself contributed, that because they live in the state of California they are to be assumed as Californian culturally.

Separated by the southerly Sierra Nevada are the Western and Eastern Mono, locally known as Mono and Paiute respectively. The former, at least about the Kings and Kaweah rivers, are culturally almost indistinguishable from the hill Yokuts, and therefore Californian.[14] The latter, according to studies undertaken by J. H. Steward, promise to show a number of Californian traits. Their habitat, however, and presumably their communications and outlook, are in the Basin; and they are here included in that area.[15]

Farther south, the Chemehuevi, who essentially are only the westernmost bands of the true or Southern Paiute, have come under some influence of the Lower Colorado culture; as have the Paiute of the Virgin-Muddy drainage: song cycles, mourning, a little agriculture and pottery, though the last seems more likely to be a Pueblo inheritance.[16] The subsistence habits and manner of life, however, continue to be Basin Shoshonean.[17]

On the east, tribes like the Ute and Shoshone are of Basin affiliations with a late Plains overlay, as discussed below. Even the Wind River Shoshone, across the divide in Missouri drainage, can best be included in Basin culture. Their nineteenth-century habitat was one of sagebrush.

[14] A. H. Gayton, UC–PAAE 24:239–255, 1929; 24:361–420, 1930; 28:57–82, 1930. The Mono of the north fork of the San Joaquin differ appreciably from the adjacent Yokuts and Miwok; see Gifford, UC–PAAE 31:15–65, 1932.

[15] Steward's study has now appeared: Ethnography of the Owens Valley Paiute, UC–PAAE 33:233–350, 1933. It shows these "Eastern Mono" (he declares the term a misnomer, in spite of the fact that Mono Lake is east of the Sierra) to have a Basin rather than Californian culture. This is confirmed by element surveys by himself and H. E. Driver comparing the Owens Valley Northern Paiute with the tribes east and west respectively. Steward has also rendered a long-needed service in determining the territorial bands of the Shoshone, and O. Stewart those of the Northern Paiute: see the supplemental bibliography in Sec. III, "Tribal Areas" (including briefer articles listed under "Ray, Park, and others"). These works, with Kelly's (see note 17, below), at last give a reasonably accurate picture of the many small groups that constitute the Great Basin Shoshoneans.

[16] Gifford, UC–PAAE 23:372, 1928.

[17] Kelly, AA 36:548–560, 1934, groups the Southern Paiute-Chemehuevi into fifteen territorial bands: San Juan (this band is the only one south of the Colorado), Kaiparowits, Panguitch, Kaibab, Uinkarets, Shivwits, St. George, Gunlock, Cedar, Beaver, Panaca, Paranigat, Moapa, Las Vegas, Chemehuevi. These are evidently small tribes, with territories averaging in area not far from 2000 square miles. However, Las Vegas with its historic Chemehuevi offshoot is disproportionately large: one-fourth of the total Southern Paiute area. Of the fifteen bands, eight agree with the Powell-Ingalls list (Hdbk. Am. Inds. 2:188), three are new, four cover the same area as twenty-three of Powell's (Kaibab two, Cedar three, Moapa seven, Las Vegas eleven), which accordingly represent subdivisions or mere localities.

Drucker's 1935 element survey unites the Chemehuevi strongly with the Yuma in culture as against a Serrano-Cahuilla-Luiseño-Diegueño unit farther west.

In short, about three marginal subareas are more or less authenticable for the Basin besides its main area:

1a. The cultural Basin area proper.
1b. The Bannock and Shoshone of the Snake-Salmon drainage.
1c. The non-Shoshonean tribes of the Klamath Lakes and Pit River.
1d. The eastern border tribes recently influenced by those of the Plains, especially the Wind River Shoshone across the Rockies.

All the tribes of the area are Shoshonean except those of subarea "c" and the Washo on the western border of "1a."

2. CALIFORNIA

Otis T. Mason made his California area include Oregon. Wissler makes it coterminous with California, except for excluding the southeastern corner of the state and including western Nevada. My classification gives southern California to the Southwest, the northwestern corner to the Northwest Coast, the northeastern, as just discussed, to the Great Basin, the eastern or trans-Sierra fringe also to the Basin. This leaves to the California area only the region which in earlier classifications, made with a local rather than continental view, I called Central California.[18] Essentially, this area consists of the Great (or Interior) Valley of California with the Coast Ranges and Sierra Nevada that flank it. Superficially it is a homogeneous unit;[19] but its plant cover is irregularly varied and difficult to classify. This is shown by the fact that no two of the vegetation maps agree closely, and that all of them recognize one or more vegetation types characteristic of the region and largely confined to it.

Broadly, the region may be defined as a bunch-grass valley containing a core of marshland and surrounded by an inner belt of chaparral-covered hills and an outer one of pine forest. However, the pine encroaches on the chaparral in the north, vice versa in the south; and on the northern coast-range side, the redwood of northwestern forest type has intruded into the pine of western forest affiliations. Even the pine cover is somewhat specialized, being classed by Shantz and Zon as a separate local subtype of yellow pine-sugar pine association (20c, map 4).

So far as native habitat and utilization are concerned, all the plant-cover classifications are somewhat misleading. Californian subsistence was built up about the acorn; and the oak occurs more or less in all the vegetational areas. Even the densely shaded redwood belt includes the tanbark oak (*Lithocarpus*) in its typical association, and the acorns of this oak were most highly esteemed by the tribes that knew them. The Great and smaller valleys to which a grass-land cover is ascribed, contained, along the streams and in their moister portions, groves of the large valley oak, which yielded perhaps the heaviest of all the acorn crops. Other oaks pervade the chaparral and run up into the pine. In fact, what the map can only show as uniform chaparral is actually an intimate interdigitation of tracts of the smaller oaks and specific chaparral

[18] BAE–B 78, fig. 73, 1925.

[19] Though the physiographers recognize three paralleling divisions, Sierra Nevada, California Trough, and California Coast Ranges (see Sec. XII and map 7), these are given a certain unity, in point of human utilization, by the central valley. The three divisions together coincide rather closely with cultural California.

(*Arctostaphylos, Adenostoma, Ceanothus*).[20] Shelford's lumping of everything below the higher-level pines into a single Broad-leafed Evergreen Semi-Desert of Winter Rains (map 3) is therefore not so crude a procedure as it may at first seem. It expresses at any rate the essential unity of the vegetation so far as native utilization is concerned. Only, it must be remembered that this winter rain semidesert includes southern California, which culturally has been reckoned with the Southwest. Southern California has already been described ethnographically as an area of characteristically Californian subsistence basis with a specific Southwestern culture content above the subsistence level.

For the eastern side of the Great Valley and western gradual slope of the Sierra, C. Hart Merriam has shown[21] a neat correspondence to hold between his life zones and the ethnic groupings, which in turn correspond to minor cultural differences. This correspondence does not hold for the coast-range half of California nor for southern California. Here the life zones run over the map in endless irregularities with which the local ethnic and cultural cleavage lines mostly fail to agree.

Historically the California culture area may be defined as a region lying between the Northwest and Southwest but not reached to any determining degree by influences from either. Influences from both can be traced: from the Northwest, chiefly along the Coast Ranges; from the Southwest, along the Sierra. The sitting cradle among the Pomo, the mourning-anniversary ceremony and feather-stick offerings among the Maidu, serve as examples. Such imports, however, are few, relative to the totality of the culture. This culture, as set forth in the preceding section, evidently began as one similar to that of the adjoining Great Basin, and has never diverged very far from it. However, subsistence in California was so much easier that culture-surplus growths developed. These found a definite climax, though not a very high one, among the Pomo, Patwin, and Valley Maidu (Kuksu cult, Hesi ceremony, Pomo basketry) about the center of the northern half of the area. The rest of the area is not classifiable according to broadly significant distributions, except into better-off valley and poorer hill tracts.[22]

[20] Shantz and Zon, Atlas, p. 8; also fig. 5.

[21] Science, 19:912–917, 1904.

[22] S. Klimek, CED: I—The Structure of California Indian Culture, UC–PAAE 37:1–70, 1935, has approached the problem with a statistical analysis of the distribution of some four hundred traits. His map (p. 52) recognizes seven California provinces: Colorado River (including Chemehuevi); Southern California (including Chumash); San Joaquin (Yokuts and Mono); Central (Yuki to Miwok); Northwestern (my California-Northwest Transition: Wailaki, Sinkyone, Wiyot, Chimariko, Shasta); Northwest Coast; Northeastern (Klamath-Modoc). The following are transitional: Wintun, Northwestern and Central; Achomawi-Atsugewi, Northwestern and Northeastern; Salinan, San Joaquin and South-Central; the mountain Maidu and Costano are sub-Central.

From intercorrelation of elements, Klimek has also determined a dozen "culture strata," whose local strength he has mapped on his pp. 54–56. Five of these strata center in as many provinces, seven in the South-Central and Central provinces. Of the latter, four have their respective areas of characterization among the Pomo; the Patwin; the Miwok, Washo, and adjacent Shoshoneans; and the Central province generally; three in the South-Central, among the Chumash-Gabrielino, Cahuilla-Luiseño-Diegueño, and Serrano.

Klimek's study opens up a new type of approach, but his determination of strata goes beyond what can be attempted in the present volume.

While the growth of the Californian climax culture may have been furthered by Northwestern and Southwestern influences, it is clear that these were not its primary determinants. The most specific manifestations of this climax are neither Northwestern nor Southwestern. A favorable ecological margin evidently brought about a cultural luxuriance, which, with but little material from the two greater centers available to work upon, because of remoteness from both, fell back on native materials to elaborate. If it had been otherwise, Pomo basketry should show as a specialization of Northwest California basketry, the Kuksu society as a modification of the datura initiation of southern California; which it would be difficult to maintain reasonably.

California, then, differs from the other intermediate areas, especially the genetically related Great Basin, in that, owing probably to less stringent preoccupation with subsistence problems, it has throughout developed a somewhat more richly characterized culture, and has even been able to mature a definite climax. It differs from the great expansive centers in that it never developed enough cultural energy to impart its products in any serious degree to other areas.

As already mentioned, the groups from the Shasta to the Sinkyone, probably including the western Wintu in Trinity drainage, are transitional between California and the Lower Klamath subculture of the Northwest Coast.

The classification of the area then is:

2a. (*Main*) *California Area.*

2b. *California Climax,* the lower Sacramento to the Russian River: Pomo, Patwin, Valley Maidu, and Nisenan.

2c. *California-Northwest Transition:* Shasta, probably Wintu west of the Coast Ranges in Trinity drainage, Chimariko, Athabascan tribes from Whilkut and Nongatl to Wailaki and Sinkyone.

3. COLUMBIA-FRASER PLATEAU

The two great drainages of the Columbia and Fraser rivers constitute the Plateau area of American ethnology, with which the Great Interior Basin has sometimes been included. As a matter of fact, not only is the Basin distinct vegetationally, ethnically, and culturally, with affiliations primarily toward the Southwest and California, but, as already shown, there is some warrant for classing the Snake portion of the Columbia drainage with it.

This leaves the middle and upper Columbia, and the Fraser above its lowest region. These are the great salmon streams of the continent, south of Alaska; and they water the area in which the Northwest Coast culture is likely to have had some of its beginning and which at any rate still forms its hinterland. As expectable, influences from east of the Rockies have also penetrated this intermountain area; and as it failed to develop any great amount of culture of its own, it has long, and on the whole correctly, been regarded as a region marked by negative traits, by absences, except for its more immediate subsistence adaptations.

Within the area, not only must the Fraser be distinguished from the Columbia, but also the latter must be separated into its middle and upper courses, making three provinces.

3a, the *Middle Columbia* area, is partly sagebrush-juniper and part bunch-grass steppe, with pine forest on the higher levels. This is the recency Sahaptin area, with a few interior Salish tribes, such as the Wenatchi, S kiuse, Spokane; and the Wailatpu.[23] The Sahaptin territory on the lower Sna and Salmon rivers is pine, interspersed with bunch-grass tracts.

3b, the *Upper Columbia* area, is wooded, forming, almost continuous part of the western or mountain forest, though there is some grassland alon the river valleys. This area holds the majority of the interior Salish trib from Methow and Okanagan to Flathead; besides them, only the Kootenay

3c, the *Fraser* area, is the home of another group of interior Salish, th Lillooet, Thompson, and Shuswap, with the Athabascan Chilcotin, Nico and perhaps Carrier. With reference to plant cover, this area is various classified. Malte (map 5) makes it a subprovince of the mountain (western forest, with three grassland "dry belts" in the south. Shelford shows it mainly as steppe in his general map (map 3), but adds a special map of interior Bri ish Columbia which gives the grassy areas in detail.[24] Harshberger (map 2) includes it in his Columbian division of the northwestern forest area; which evidently refers to species representation rather than to habitus or density of vegetation.[25] The common factors in these divergent classifications seem to be that the Fraser drainage is drier than the Upper Columbia, that its forest is sparser and more interrupted by stretches of steppe, and that its flora leans somewhat more toward that of the coast. This last factor is in line with its being a more specific cultural hinterland to the Northwest Coast than is either of the Columbia areas.

The Fraser area has also been partly protected, culturally, against eastern influences by the Upper Columbia, whose forestation would filter out many specific Plains traits. It may therefore be reckoned as culturally nearest, of the three Plateau provinces, to the Northwest Coast. It was the Middle Columbia, with its prevalence of open country, that finally proved most receptive to Plains influences. Of the more special luxury manifestations of Plains culture, like the coup system, the societies, the Sun dance, only fragments got over the Rockies; material adaptations like the tepee, the parflêche, and floral bead designs were largely accepted, and almost made the Middle Columbia culture over. The consequence was an unusually sharp cleavage at The Dalles, where alone Pacific Coast and Plains culture traits met in a conspicuous nonconformity. It must be remembered, however, that this is true of Plains horse

[23] Boas, BAE-R 41, map, has the Salish before 1800 holding both banks of the Columbia as far down as the Chinook, and the Sahaptin, exclusive of the Nez Percé, on the middle Snake, John Day, and Deschutes rivers.

Two other tribal maps of the region have appeared since my continental tribal map was drawn: Spier's Tribal Distribution in Washington, Gen. Ser. in Anthr., no. 3, 1936; and V. F. Ray's Native Villages and Groupings of the Columbia Basin, Pac. Northwest Quart., 27, no. 2, 1936. Spier's map (p. 43) is for the early nineteenth century, Ray's (pp. 5 ff.) for about 1850. These maps, Boas's, and Mooney's all present discrepancies, due partly to shifts of groups.

[24] J. Davidson in Shelford, fig. 8, p. 155; A. H. Hutchinson, p. 156. These grassy dry belts contain sagebrush and cactus.

[25] Harshberger, 599, recognizes a sage formation (*Artemisia tridentata*) in the middle valley of the Fraser as an extension of the Great Basin flora.

culture, probably not of the old culture of the Plains. In 1600 and 1700 the Middle Columbia was still a true transition area, an intermediate low-level zone. By 1800 the Plains influence had begun to come in; most of it probably fell within the nineteenth century; it continued operative in some degree after the beginning of Caucasian settlement; and at the base of the Cascades a little of it turned and flowed southward into a corner of the Basin area in northeastern California, to the Klamath-Modoc and Achomawi. To what respective degree this late Plains influence reached the Sahaptin of the Middle Columbia through the Salishan tribes of the Pend d'Oreille branch of the Columbia, or through the Shoshonean Lemhi and Bannock of the Snake drainage, is not clear. It evidently did not come through the Great Basin Shoshoneans actually in contact with Plains tribes, such as the Ute and Shoshone, else the effects would presumably have been passed on also to their westerly kinsmen the Western Shoshone and Northern and Southern Paiute, which was not what occurred.

These remarks on recency do not mean that the Columbia and Snake did not serve at all as a channel of communications between the Pacific Coast and Atlantic drainage in prehistoric time. They must have done so. Only, the connections must have been far slighter before use of the horse; and the relatively poor subsistence conditions and consequent low level of culture along the Columbia and Snake would have strained out many of the more specialized traits, and most or all of the luxury developments, of both eastern and western culture.

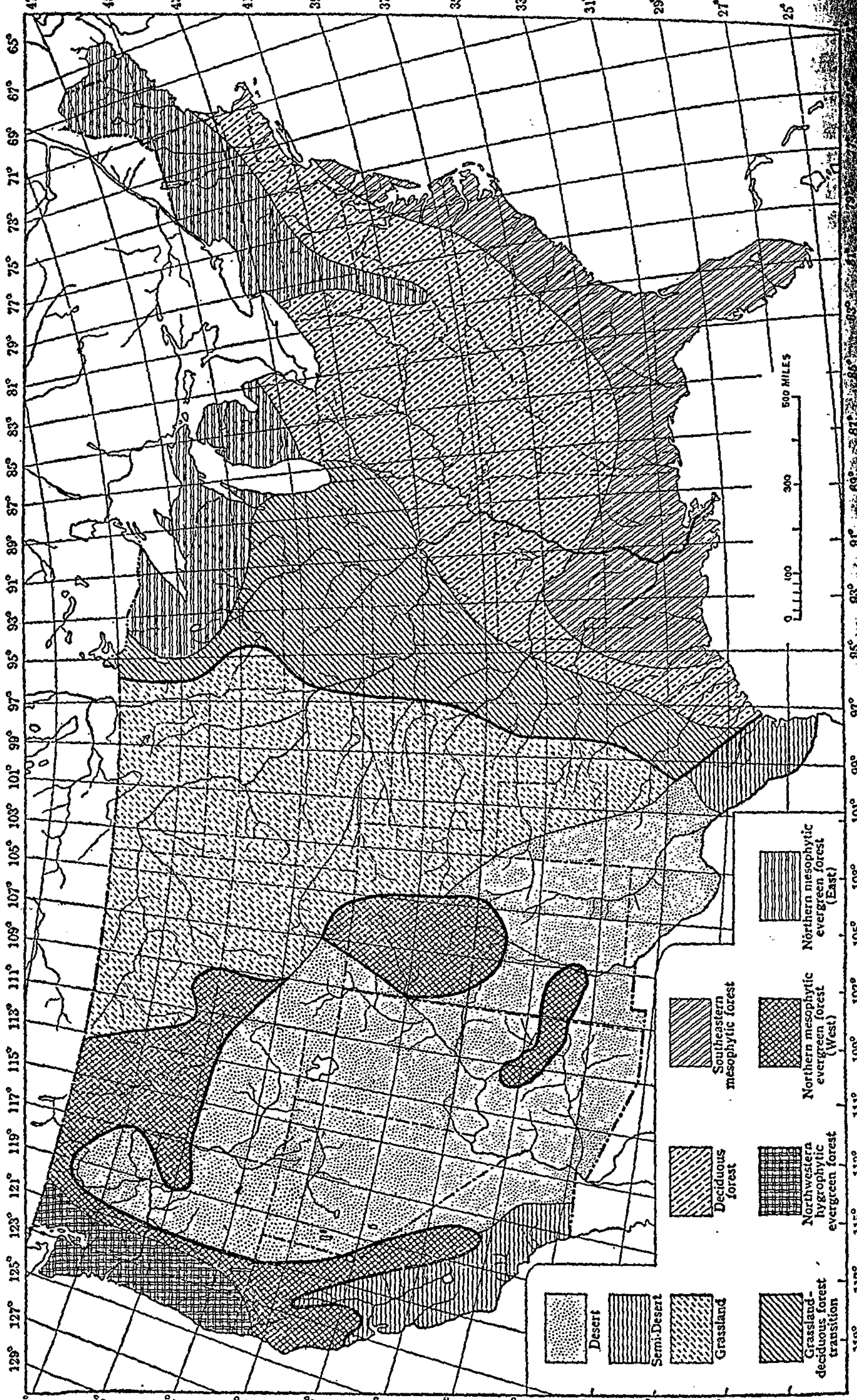
The ethnological position of the Carrier on the upper Fraser is not clear. Their communications with the coast seem to have been directly across the mountains with Tsimshian and Haisla, not through the Fraser Salish. Almost certainly, also, they maintained more intercourse with their Athabascan kinsmen east of the mountains than did the southward-facing Shuswap. The Carrier may therefore have to be reckoned as forming a separate subprovince, either of the Fraser area or, more likely, of the northwest Athabascan interior.[26]

Farther north, inland from the Tlingit, live the Athabascan Tahltan and Taku-tine, on the Stikine and other Pacific rivers, the Taku-tine also partly in upper Yukon drainage. Both groups are part of the Nahane division, the rest of which holds Mackenzie drainage territory. The vegetation maps are not very definite or concordant for this poorly explored region. The Tahltan have been subjected to Tlingit influences. But on the whole it seems justifiable to include them with the other northwestern Athabascans. It is possible that with their interior neighbors, the Kaska, Etchao-tine, and Abbato-tine, they constitute a last, most northerly, intermountain culture group. Even so, however, this would properly form a subprovince of the western or Athabascan division of the great interior Subarctic area.[27]

I add in map 9 a reproduction of Livingston and Shreve's "generalized vegetation map" of the United States, with a heavy line added to bring out more

[26] See Eastern and Northern Areas, Sec. IX, 16c, p. 99 below.

[27] The same, 16d.



Map 9. Generalized Vegetation (9 general types) of the United States, from Livingston and Sh...
more emphatically the division between open country ...
country corresponds fairly closely with the ...

graphically a basic distinction which can sometimes be profitably made between open and forested country in general, apart from the specific types of plant cover which constitute each. This map also correlates with that of Russell's dry climates (no. 24). It shows as open country, either desert, steppe, grassland, or shrub, the great mass of the Southwest in the United States; most of the Intermediate-Intermountain territory, namely, all the Basin, most of California, and part of the Plateau; and the Plains and Prairie areas, which remain to be considered. With the exception of the tall-grass Prairies, these all evince ancient cultural interconnection: the Sonora-Yuma area with the Pueblo, this with the Basin, this again with California, Plateau, and true Plains. Only the Prairies lean culturally on the eastern forest into which they pass over a highly irregular boundary.

IX. CULTURE AREAS: EAST AND NORTH

Eastern Areas

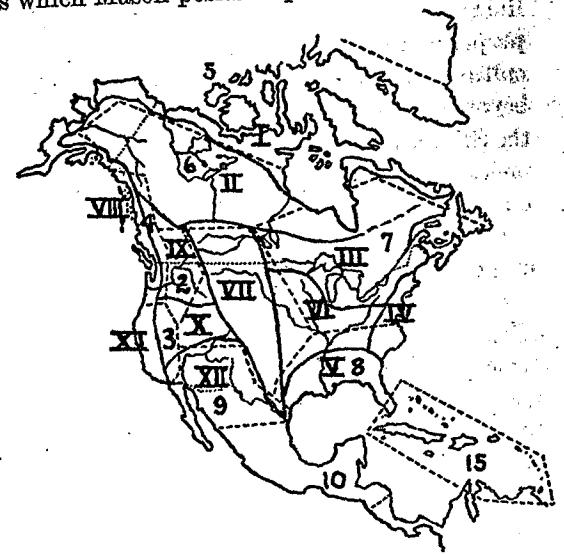
The rest of the continent north of Mexico, embracing nearly the whole of the Atlantic and Arctic drainages, constitutes a series of areas whose relations are different from those so far considered. The Eskimo, Northwest, and Southwest cultures are highly defined, whereas those of California and the intermountain regions are low-level in characterization and transitional in content. East of the Rockies there is not a single native culture of as high a degree of characterization as occur west; nor, except in some regions near the minimum of subsistence potentiality, any as culturally uncharacterized as some of the western transitional cultures. In other words, the Atlantic side of North America is relatively uniform in its native culture. Its bent or direction is fundamentally similar everywhere. Once local subsistence adaptations and local culture imports are allowed for, there remains little in the way of local development; and, concomitantly, no great degree of difference in culture intensification.

This lightness of cultural contour has its parallels in the environment. East of the Rockies there is not a single high or formidable mountain mass, not an elevated plateau. With all the range in latitude, summers are nearly everywhere hot, winters either cold or at least punctuated by frosts and raw winds; seasonal variation in temperature is accentuated, precipitation fairly distributed throughout the year. The plant cover is prevailingly forest, shading through parkland into open grass only toward the Rockies.[1] There is nothing like the wetness of the Northwest Coast, the deserts of the Southwest and Basin, or the winter rains of California; no extensive scrub nor shrub land. The vegetation areas are fewer, larger, more continuous, the differences between many of them slight.

As might be expected, segregation of the vast Eastern territory into cultural areas is difficult, and classification has varied. Mason recognizes six, Wissler only four areas. These have already been cited for their agreements, but their disagreements are equally significant.

Mason's eastern areas are: *Yukon-Mackenzie,* defined as the transcontinental coniferous belt, draining into arctic seas; *St. Lawrence and Lakes,* from Manitoba to northern New England; *Atlantic Slope,* Massachusetts to South Carolina; *Gulf Coast,* Georgia to Texas; *Mississippi Valley; Plains.* As against these, the Wissler eastern areas are *Mackenzie, Eastern Woodland, Southeast, Plains.*

The difference is not only that Mason subdivides further. In fact, his Yukon-Mackenzie area sweeps across the continent to the Atlantic, taking in part of Wissler's Eastern Woodland. The rest of Wissler's Eastern (really Northeastern) Woodland, Mason assigns to his St. Lawrence-and-Lakes, Atlantic, and Mississippi Valley areas, which, however, also overlap into Wissler's Southeast and Plains areas. Wissler, after noting that the characterization of his Woodland culture is difficult, divides it into four types: a northern, non-agricultural and similar in material culture to the Mackenzie; an Iroquoian; a central Algonkin, west of the last named; and an eastern Algonkin, from Abnaki to Delaware. It will be seen that these four subareas do not correspond to the four parts of larger areas which Mason posits in place of their aggregate, the Eastern Woodland. The comparative diagram herewith, map 10, based on Wissler's schematized map and Mason's text, illustrates the degree of discrepancy.



Map 10. The Ethnic Environment and Culture-area Classifications of Mason and Wissler, superposed. Mason: solid lines, roman numerals; Wissler, broken lines, arabic numerals.

With this experience before us, it seems wisest to vary the procedure of Wissler and that which has been followed here so far, namely, of blocking out the grand areas and then subdividing them; and instead, to begin with defining as small areas as justifiable. Of these, I recognize sixteen, plus some subdivisions: not all coördinate, almost surely, but yet difficult to subordinate to major divisions. Indeed, I confess myself unable to set up such a major framework satisfactorily for this large part of the continent. I have followed a quasi grouping into Eastern areas and Northern areas, corresponding more or less to those with and without agriculture or agricultural antecedents, respectively. But this is pretty summary. Within the Eastern group of areas, I accord preëminence to the Southeast; but this again does not take us very far. I do, at several points, discuss historic relations and cultural dependences. For the rest, I can only say that while my sixteen areas may seem seriated as if they possessed equal cultural weight and depth, they obviously are not equivalent. The culture of the eastern part of the continent simply is harder to organize than the rest.

1. SOUTHEAST

The Southeast is a long-recognized culture which unquestionably forms a valid unit, provided its area is not made to take in too much, but is limited to the Muskogian tribes and some of their immediate neighbors such as the Natchez and Tunica on one side and the Timucua and Yuchi on the other. This is the area that must be accorded such cultural primacy as there was east of the

[1] G. Friederici, Der Grad der Durchdringbarkeit Nordamerikas, etc., Petermanns Mitteilungen, Ergänzungsheft 209, 216–229, 1930, argues that most of the eastern woodland, at least in the United States, was an open stand without underbrush, easily traversed even by vehicles, this condition being due to systematic firing by the Indians. He also discusses prairies, swamps, oak openings, groves, canebrakes, etc., features which may often have been of more importance for native occupants than the average composition of the prevailing timber cover.

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Rocky Mountains. But it cannot be regarded as marked off by abrupt tra
tions of either cultural content or cultural saturation such as one encou
in passing out of the Northwest Coast or Pueblo areas.

There is one thing, however, that corroborates the Southeast as cultura
most advanced in the eastern half of the continent: it contained a distingui
able climax or focus. This climax lay on the lower Mississippi, among
Natchez and their neighbors. What sets these tribes apart is slight enou
their class system, with its emphasis on rank and sun symbolism. Their ma
lineate, litters, war captive sacrifice-torture, maize-harvest busk, ossuary a
perpetual fire "temples," as well as everything that is known of their mate
culture, are found rather generally through the Southeast, and in part
beyond. It is the peculiar system of class exogamy by extremes, with death
the Stinkard on death of the Sun Spouse, and ranking of the children of Su
males in an intermediate class, that is distinctive. In fact, it is so decided
unique that its authenticity might be doubted were it not for the corroboration
of several reports. There is about this Natchez system something of the quali
of a remnant: it is hard to conceive as a product growing out of the genera
Southeastern social structure. And it is clear that the French received th
idea, in part from Natchez tradition itself, that the Natchez had dwindled
from a previously more prosperous condition. But, whatever the origin, the
system is peculiar and definite enough to fall into the category of a luxury
product and therefore to be indicative of a climax condition, whether this was
active or waning at the time of discovery.

Captive torture on the frame is another trait that looks like a worn-down
survival in the light of Mexican captive sacrifice, sometimes also performed on
a frame, and with the Pawnee sacrifice of a girl on a frame occurring even
farther north.[2] This in spite of the fact that neither Natchez nor Muskogi seem
to have been conscious that the torture was a sacrifice, and that torture ex
tended far beyond the Southeast.

What may seem evidence of another climax, the successful Creek confed
eracy, must be interpreted as a formation which probably could not have
arisen in native times. Not only were most of the Creeks provided with fire
arms, livestock, and fruit trees before white settlement reached them, but they
had seen the Coast tribes, from South Carolina to Louisiana, one after another
shattered or wasted under English, Spanish, or French contact. They had in
fact received refugees from many of these tribes. Their confederacy was the
quadruple product of these reënforcements, of an economic life full of Cau
casian absorptions, of pressure or consciousness of threat from the course of
white settlement, and of a geographical situation that gave them more than
a century of relative respite from fatal conflict with the invaders. Under
purely native conditions, the Creek league would not have been so populous,
cohesive, or permanent. To a less conspicuous degree, the same applies to the
fortunes of the Cherokee, Choctaw, and Chickasaw; and it holds, perhaps even
more notably, for the Iroquois in the north. The pattern of these confederacies
was mainly or wholly native; their success and subsequent organization in

[2] Wissler and Spinden, Am. Mus. Jour., 16, 1916; Linton, AA 28:457–466, 1926.

detail were the result of the coming of the whites and the misfortunes of other tribes. These other tribes probably had possessed a very similar social apparatus capable of development toward political integration, but were crushed before this development could grow beyond the native stage. In the light of all this, the "constitutional government" of the "five civilized tribes" was the last of three stages: first, unstable and loosely integrated leagues in native times; second, politically successful confederacies under white stimulus and pressure; and third, imitations of the American government after the loss of independence.

So far as this argument may be accepted, the inference follows that Creek culture was not quite so specialized as the Natchez at the time of discovery, and that therefore there need be little question that the focus within the area was situated on the lower Mississippi.

The tribes includable in the Southeastern area are all the Muskogian peoples; the Yuchi; the Timucua, but none beyond them in Florida; the Siouan Ofo and Biloxi; the Tunican, Natchez, and Chitimachan peoples. The Atakapa seem to have been more or less transitional between this area and the South Texas area, in which they are here placed. The Quapaw-Arkansas may have belonged in the true Southeast, but have been tentatively reckoned as in the Red River area. The Timucua possibly were distinct enough to be considered as forming a subprovince. The Cherokee I exclude. The area, then, extends from the Savannah River to just across the Mississippi.

Except for small areas of prairie and marsh grassland, the whole Southeast was forested. The prevailing cover was of the Southeastern Pines. There were also fairly large tracts of River-bottom, Cypress, or Swamp Forest; of Piedmont Oak-Pine mixture or Transition Forest; and, especially on the northwest, of Trans-Alleghanian Oak-Chestnut Deciduous Forest. The Natchez and their neighbors lived in a habitat of River-bottom and Transition Forest, the Chickasaw largely in Deciduous; the Choctaw and Creek chiefly in the Pine, but also in the Piedmont Transition; the Timucua, Apalachi, and other coast tribes in Pine country studded with hardwood hammocks, traversed by a River-bottom stand along the streams, and fringed by shore marshes; the Chitimacha, and the supposedly Muskogian tribes downstream from New Orleans, in a region of prevailing marsh grassland. These are the attributions in terms mainly of Shantz and Zon (map 4). The other ecological sources differ somewhat in detail, but give a similar picture. Shreve (map 5) and Harshberger (map 2) carry the Southeastern Pine Forest somewhat farther across the Mississippi, so as to include much of Caddo and Quapaw territory; which may be culturally significant. All in all, it is clear that the Southeastern culture was not limited to one type of plant cover;[3] but Pine Forest constitutes its largest block, and conversely most of the Southeastern Pine grew within the Southeastern culture area.

Some centuries before the discovery, there flourished, most outstandingly in the Ohio Valley, but also in the region of the Great Lakes, the Mississippi Valley, and the Southeast, the culture or aggregation of cultures known by the

[3] The pure pine stand is mainly attributable to local soil conditions.

loose name of Mound Builder. This culture has similarities to that of ... Southeast, and some sort of relationship is generally assumed. Whether in ... earlier time the climax lay in the Ohio Valley region and the Southeast ... dependent on this, becoming the climax only on the decay or retreat of ... more northerly center; or whether the region of the lower Mississippi ... already then the center, as its greater proximity to Mexico would make ... pectable, and the Ohio Valley culture was a locally flourishing variant—... alternative cannot now be decided. After all, there has not yet been a seri... attempt to integrate and interpret in broad terms the large mass of archae... logical material which for a century has accumulated east of the Mississipp...

Since most of the foregoing was first written, Swanton has published a va... able general paper, The Aboriginal Culture of the Southeast.[4] In this he enu... merates Southeastern culture elements as well as their distribution in ... areal subdivisions, besides sketching the presumable development of the whol... type of culture. Both his delimitation and his internal organization of the are... differ from mine at a number of points; but, with all deference to his mor... thorough knowledge, I have decided to let my classification stand as written ... for comparison. Swanton excludes from the Southeast the Calusa, Atakapa, ... Quapaw, and Shawnee, but, like Speck,[5] extends the culture to the Potomac ... His subdivisions are: 1, Algonkin tidewater of Virginia and North Carolina; ... 2, Eastern Siouan area, Piedmont and Coast; 3, Timucua; 4, Creek, with the ... Georgia coast, Yuchi, Cherokee, and Chickasaw as marginal; 5, Choctaw; 6, ... Natchez and allies; 7, Chitimacha; 8, Tunica; 9, Caddo. On these matters, the ... differences between Swanton and myself perhaps largely concern what might ... be called taxonomic order. Probably of greater historic import is his heavier ... weighting of inland as against coastal populations; and especially of the cul... ture of the Creek. By my standard, he is interpreting in the light of eighteenth- ... rather than of sixteenth-century conditions; but others must judge who is ... most nearly right.[6]

Muskogian and Creek

The problem of what constituted Creeks and what Muskogians remains rather ... obscure. Swanton's detailed researches have not yet made the fundamentals ... of the situation clear—in the main, it would seem, because the Creek confed- ... eracy was very different things at different times. Muskogian tribes that at one ...

[4] BAE–B 42:673–726, 1928.

[5] Cited below, under "Atlantic Coast Areas."

[6] I believe I am not in fundamental conflict with Swanton in drawing the lines of my Southeast narrower than his. He defines his Southeast with reference to three or four other eastern culture areas; I with reference to fifteen. As between assigning the Caddo to the conventional Southeast or the conventional Plains, for instance, I would unqualifiedly follow him in the former course. Our differences appear to refer to frame rather than to specific relationships.

Two important papers, illustrated by six maps, were read by Swanton at the December, 1932, Conference on Southern Prehistory at Birmingham, Alabama, under National Research Council auspices. I do not cite these, because the mimeographed report is marked "Not for publication"; but all anthropologists trust that both papers may soon be officially published in full or with extensions.

In 1935 Swanton published Notes on the Cultural Province of the Southeast, AA 37: 373–385, in which he reviews various problems of prehistoric and historic culture and population in the area.

...were wholly independent of the Creek and perhaps hostile to them, later ...became reduced in numbers, moved, joined the confederacy, and gave up their ...proper dialect; just as did non-Muskogian tribes like Natchez, Yuchi, and ...Shawnee. At least three Muskogian dialect groups were represented in the ...Creek confederacy, besides fragments. These three are the Muskogi proper or ...Upper Creek; the Hitchiti-Apalachicola; and the Alabama-Koasati. Muskogi ...therefore denotes, in one sense, a relatively limited group which formed a ...fraction of the later Creeks; in another and later sense, the whole family of ...which the Creek along with the Choctaw, Chickasaw, and many others were ...members.

Swanton's linguistic classification of the Muskogian family proper[7] (without Natchez, etc.) recognizes two grand divisions, a "Northern" or Muskogi, and a "Southern." The Northern or Muskogi division (A) has enumerated under it only a number of Creek "towns" like Kauita, Kusa, Eufaula, Tukabachi, Hohliwahali, nearly all of which are Upper Creek. The Southern division (B) has no fewer than nine subdivisions: 1, Choctaw-Chickasaw; 2, Alabama-Koasati; 3, Hitchiti; 4, Chatot; 5, Apalachi; 6, Osochi; 7, Guale-Yamasi; 8, Cusabo; 9, Tuskegee. The Hitchiti proper formed part of the Lower Creeks, as did the related Okmulgee, Oconee, etc.; but again, independent tribes like the Apalachicola are reckoned as part of the Hitchiti dialect group. The same may be said of the Alabama-Koasati group, some of which was, or became, Lower Creek, whereas at least some of it was originally non-Creek politically. The Choctaw-Chickasaw group was the largest of all, and included not only these two nations, which always remained independent, but also a series of tribes (Chakchiuma, etc.) on the Yazoo River; another (Houma to Acolapisa) on the lowest Mississippi and the Pearl River; and a third (Mobile, Pensacola) on the Alabama and western Florida coast. The Chatot, Apalachi, Osochi, Guale-Yamasi, Cusabo groups were smaller, and situated to the south and east of the later Creeks.

I have plotted the approximate distribution of these dialect groups[8] on map 11. It will be seen at once that the names "Northern" and "Southern" are wholly inappropriate for the two grand divisions of the Muskogian family, though they have some justification within the later Creek confederacy. The "Northern" or Muskogi proper division has "Southern" dialect groups on its east, south, west, and northwest. In fact, it is entirely surrounded by them except on the north, where its territory was bounded by that of the alien Cherokee. It is also much the smaller group areally, occupying not more than a sixth of the total Muskogian territory. If, therefore, Swanton's classification of Muskogi proper as one of two coördinate main branches of the Muskogian stocks is linguistically sound, we are confronted by the very anomalous situation that the most distinctive dialect group of the family lies almost surrounded by the others, and that the peripherally situated dialects are not the most aberrant. This raises a suspicion about the classification, namely, that it

[7] BAE–B 73:11, 1922.

[8] Except the Tuskegee, since I cannot gather from Swanton's account where he thinks their original habitat lay

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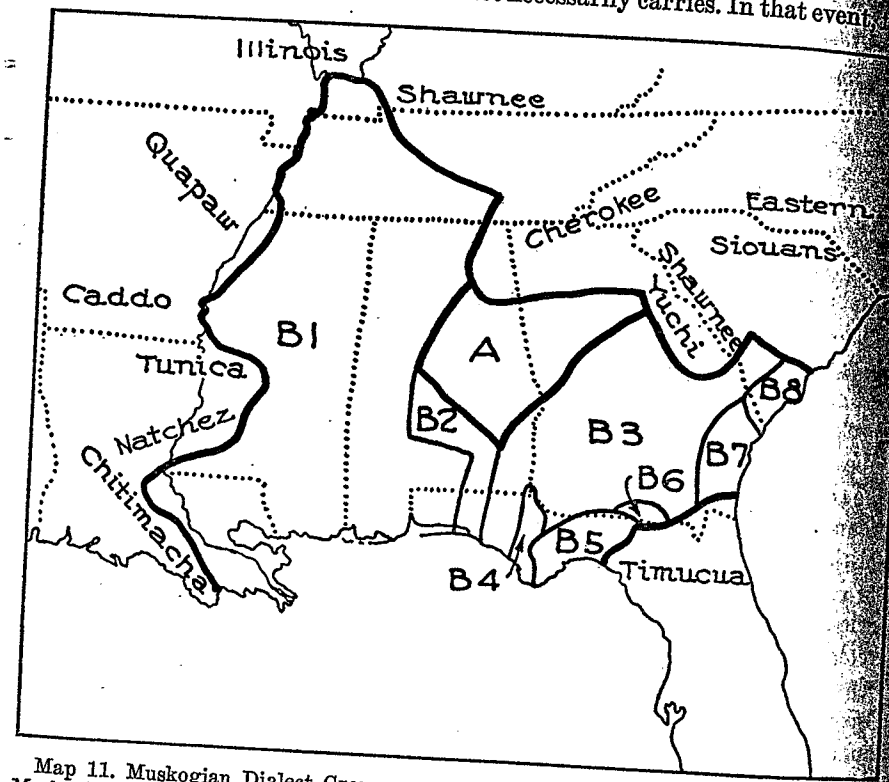
may have been made primarily with the Muskogi proper (A) in mind, and hence the nine B groups do not really agree among themselves so much in ... cally as in all differing from the accidental starting point A. If Swanton's primary division into A and B is sustained by equalized comparison of ... data, a reason ought to be sought for the distinctiveness of A, on account ... the historical significance which the fact necessarily carries. In that event ...



Map 11. Muskogian Dialect Groups; compiled from Swanton's data. A, Northern or Muskogi. B, Southern, comprising: 1, Choctaw-Chickasaw; 2, Alabama-Koasati; 3, Hitchiti; 4, Chatot; 5, Apalachi; 6, Osochi; 7, Guale-Yamasi; 8, Cusabo.

possibilities suggest themselves, namely, that the Muskogi proper (A) have somewhat altered their speech through Cherokee contacts; or, more likely, that their habitat set them off somewhat from all their relatives. It is a hill country, where the Appalachian System breaks down, and was prevailingly covered with hardwood forest (oak-pine type) as against the Southeastern coniferous stand that dominated most of the remainder of Muskogian holdings.

However this may have been, the Choctaw-Chickasaw-Houma-Pensacola group (B1) is much the largest, covering about as much territory as all the rest together. The Hitchiti group (B3) was next largest, and, with the Alabama-Koasati (B2), it joined with the Muskogi proper (A) to form the greater part of the Creek nation in confederacy times. On the whole, A came to constitute the Upper and B2–B3 the Lower Creeks; but with certain notable exceptions, such as Kauita and Kasihta, which spoke Muskogi proper, yet were the

leading war and peace towns of the Lower Creeks. The Muskogi proper, being best protected from English, Spanish, and French encroachment and demoralization by their remote situation, probably came in time to occupy a precedence which they were far from enjoying in the wholly aboriginal period. The other divisions (B4 to B8) were small groups forming a southeastern fringe of the stock from the Gulf across the neck of Florida to the Atlantic.

2. SOUTH FLORIDA

What is known ethnologically of the tribes of Florida south of Tampa Bay has been brought together by Swanton.[9] It is evident that culture was of Southeastern type, but in a poorer phase: pottery seems to have been made, but agriculture is specifically stated not to have been practiced. The Atlantic Coast tribes in particular led a sort of beachcomber's life. Their gold may have been taken mainly from Spanish wrecks.

The archaeological evidence at first seems conflicting, owing to the prominence of Cushing's famous but still only partly published findings at Key Marco. It is the preservation of wooden objects in muck that distinguishes this site, and Moore has shown that a deliberate attempt to find a second similar site would be nearly hopeless. Nor have other sites been discovered by accident, though a few wooden pieces from other spots in southern Florida have come to light and been described by Fewkes. These allow the ascription of a fairly developed carving art to the southern half of the peninsula at some time in its prehistory. The extensive explorations of Moore, however, confirm the ethnological data in showing that on the whole the ancient culture, like the historic one, was definitely meager south of Tampa Bay. Another fact which excavations seem to have established with fair conclusiveness, though more especially for Tampa Bay and the northern part of the peninsula, is a stratigraphic succession from no pottery to plain pottery to ornamented pottery.[10]

All in all, Antillean influences are not so notable in southern Florida as might be expected from proximity. It seems that such Antillean features as occur in North America are characteristic of the Gulf Coast or Southeast as a whole rather than specific to a South Florida culture area.[11] This would suggest that connections were active chiefly at some time earlier than the discovery, and were followed perhaps by a period of dwindling of relations.

In this connection it is no doubt significant that the climax of West Indian development lay in Puerto Rico and Haiti, and that those parts of the archipelago nearest to Florida showed a meager culture. This was especially true of western Cuba. The Bahamas also, with their limited environment, can have possessed only part of the stock of Antillean culture. Wissler,[12] Gower,[13]

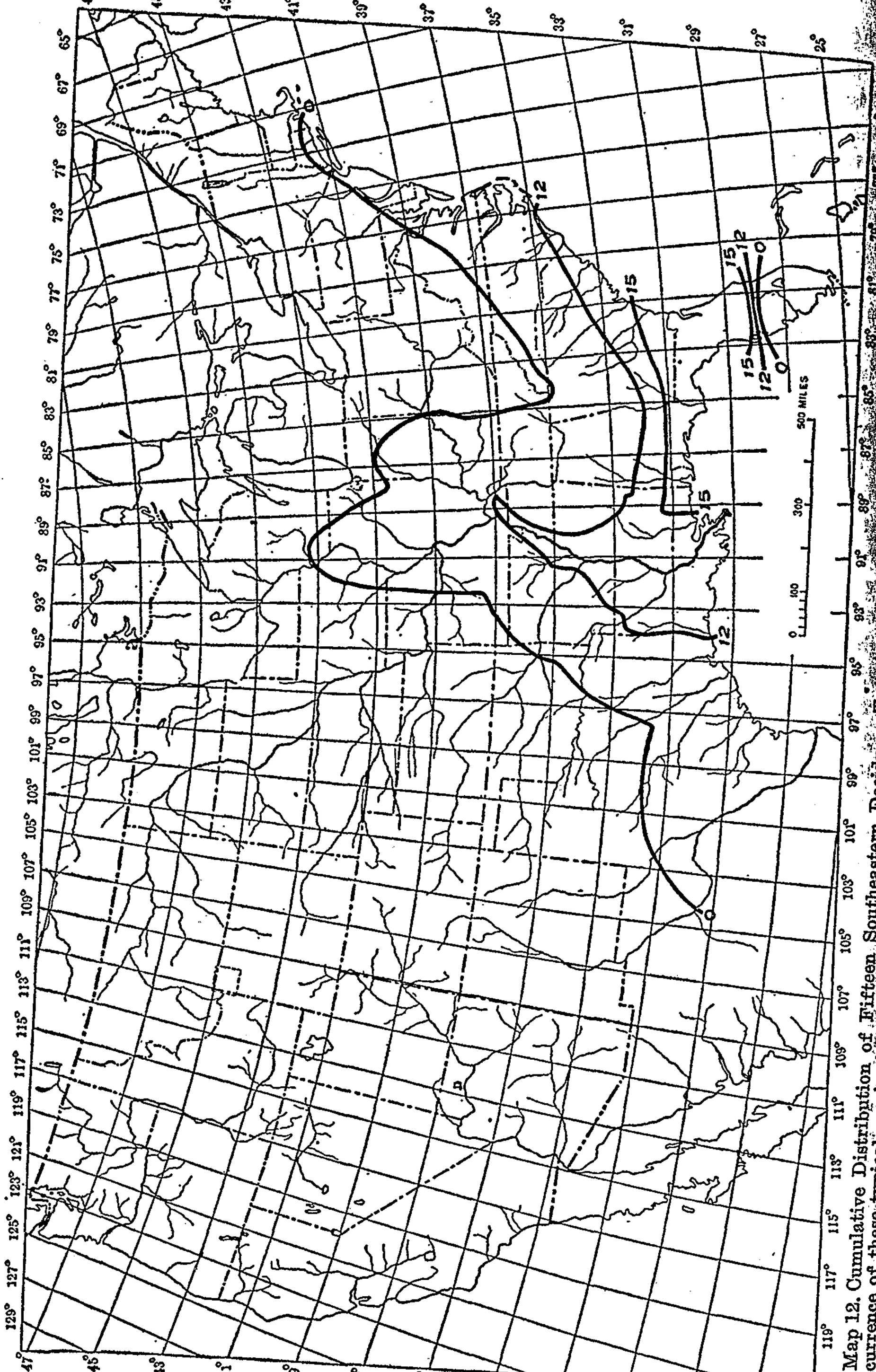
[9] BAE–B 73, 1922, esp. 387–398.

[10] Cushing, Proc. Am. Philos. Soc., 35:329–342, 1896; Fewkes, SI–MC 76, no. 13 (publ. 2787), 1924, 80, no. 9 (publ. 2960), 1928; C. B. Moore, Jour. Acad. Nat. Sci. Phila., 11:352–394, 1900, 11:421–497, 1901, 12:127–357, 1902, 12:364–394, 1903, 13:126–244, 299–325, 1905, 13:406–470, 1907, 16:515–577, 1918; J. Wyman, Mem. Peabody Acad. Sci., 1:1–94, 1875; S. T. Walker, SI–AR for 1879, 1881, 1883; N. C. Nelson, AMNH–AP 22:75–103, 1918; W. H. Holmes, BAE–R 20, 1903.

[11] W. H. Holmes, AA 7:71–79, 1894.

[12] American Indian, 257, 1922.

[13] AAA–M 35, 1927.



Map 12. Cumulative Distribution of Fifteen Southeastern Deciduous Trees, from Livingston and ... occurrence of these typical species in southern Florida. On the other hand, ... area; and there is an obvious extension north along the Atlantic ...

Lovén[14]—the last on the basis of an intensive analysis—agree that West Indian culture is fundamentally South American. South Florida and west Cuba-Bahamas therefore were the poor peripheries of two areas whose centers in 1500 A.D. lay far apart—one on the lower Mississippi and the other on the South American mainland. This appears to be the reason why the tip of the peninsula, in spite of the fact that its climate and life were tropical, did not form an outright part of the Antillean culture area: mainland contiguity to the Southeast prevailed over environmental unison with the islands. At an earlier period, when cultural and ethnic relations were different, it may have formed part of the Antillean area.[15]

Southern Florida is a distinct natural area, though far from an ecological unit. The vegetation maps differ in terminology of characterization as well as in detail of area, but agree in marking off at least part of the southern end of the peninsula from the remainder of the southeastern United States. Harshberger (map 2) and Shelford (map 3) indicate the Antillean relations of the flora; Merriam puts the tip of the peninsula into the Tropical life zone. A small map of tree-species distribution, reproduced in map 12 from Livingston and Shreve, is an index of the particularity of the region. The outstanding climatic features are high temperature, due not only to latitude but also to warm ocean waters; and seasonal precipitation of savanna type—dry winter and wet summer. Land form, drainage, and soil cause the marked variations within this frame. The Everglades, for instance, alternate each year between being a lake and a prairie; surrounding them are swamp, scrub, tropical, mangrove, deciduous, and pine forest, and mixtures of these. Watson's classification of Florida plant covers,[16] though referring to the state as a whole, usefully supplements the somewhat schematic presentation of the maps, as table 3 shows.

Map 14, below, also shows incisively the high specialization of South Florida in evergreen broad-leaved trees.

In summary, it is clear that the southern end of the peninsula presents a distinctive environmental as well as cultural type. The ecology approaches the tropical, the culture is low-level. The environmentalist explanation would be that tropical environment retards or depresses culture through its physiological effect on the human organism. But this explanation leaves out cultural or historical factors, which are necessarily operative in all cultural phenomena, in order to build up a pseudo law by injecting remote, vague, and indirect physiological factors. A reasonably sufficient interpretation is given by the interaction of environment and history. The culture of South Florida, being mainly derived from that of the Southeast with its essentially temperate adaptation, lost something and gained little by its transplantation to a different environment. That this environment was tropical is a mere incident: the Southeastern culture diminished equally in intensity northward in proportion as it extended into cooler temperate habitats. If the historic culture of

[14] Ueber die Wurzeln der Tainischen Kultur, pt. 1, Göteborg, 1924.
[15] As suggested by Fewkes, 1924, Conclusion.
[16] In Shelford, 427–440. Compare Harshberger, 227–232, 695–700.

the Southeast had been primarily South American or Antillean in origin, tropical Florida would presumably have preserved it most fully and the of the Southeast have shown the impoverished form.

This, then, illustrates how ecological considerations strengthen the histo conclusions toward which anthropologists have tended as a result of anal and comparison of culture.

TABLE 3

FLORIDA VEGETATION TYPES

(After Watson)

1a. Grassy swamps, savannas, and marshes. Most of the southern third of the penin Everglades. *Cladium effusum* saw grass.
1b. Salt marsh. *Spartina,* and in extreme south *Mariscus jamaicensis* saw gras
1c. Mangrove swamp.

2a. Flatwoods. Open pine forest on level, poorly drained, acid soil, interspersed with vegetation.
2b. Cypress swamp. Depressions in flatwoods, stream and lake borders. Big Cypr swamp southwest of Lake Okeechobee.

3a. Scrub. On drier sands and dunes. Saw palmetto, evergreen oaks, *Opuntia, Ilex;* on dun also cabbage palmetto, *Agave, Yucca.*
3b. Spruce pine, *Pinus clausa,* on less dry sand, interspersed among 2 and 4.

4. High pine woods. Rolling, well-drained country. Open stand of long-leaved pine, inter spersed with saw palmetto, scrub oak, lupin, chinquapin, short grass.

5. Hammocks. Hardwood forests, deciduous and evergreen.
5a. High-hammock climax. Evergreen magnolias, red bay, and holly dominant.
5b. High hammocks. Deciduous trees preponderant. Most extensive toward northern parts of state, where it merges gradually into the eastern deciduous fores Farther south, transitional between 4 and 5c.
5c. Low hammocks. On wet lands between 2b and 5c. Tupelo, ash, maple, hackberry, water oak and swamp oak, magnolia, cabbage palmetto.
5d. (=6). Tropical hammocks. Dense jungle, mostly evergreen, with lianas and epiphytes. Banyans, wild papaya, *Swietenia, Ficus, Ocotea,* hickory.

3. SOUTH TEXAS: NORTHWEST GULF COAST

South Texas is an area which is little known. Every tribe in it has long been culturally extinct; some are absolutely so. Cabeza de Vaca found them poor and hungry; and so they seem to have remained. They were cannibalistic. They practiced no agriculture. They got bison too rarely to depend on them. They made little pottery. There was, no doubt, a subsistence differentiation between those immediately on the coast and those inland, but otherwise the culture seems to have varied little in fundamentals. The peoples involved were the Karankawa, the Tonkawa, and later in part the Athabascan-Apache Lipan. The agricultural Atakapa[17] leaned toward the Southeast, but may be counted in cultural Texas. Part of the territory attributed to the Mescalero Apache on map 1 may once have belonged in. The Coahuiltec on both sides of the lower Rio Grande, and the so-called Tamaulipec to the south beyond, very likely were closely related in culture to the South Texas peoples. It is toward

[17] BAE–B 43:35–36, 360–363, 1911.

the southern boundary of the Tamaulipec, a little north of the Pánuco River, that agriculture and pyramidal structures appear and the South Mexican culture may be said to begin.

The South Texas area—or, better, the Northwest Gulf Coast area of which it is part—accordingly reaches from the edge of cultural Mexico almost to the border of the Southeastern climax. Expectably, this intervening area should manifest some traces of having been the medium through which the generally recognized connections between these two areas of higher-level culture passed. Instead, we have what Swanton aptly describes as a cultural sink.[18] Archaeological exploration, which has never been systematically attempted there, may bring something to light; but nothing very notable is to be expected, else some indications should have appeared through cultivation and settlement before now. The problem is the more puzzling in that those Southeastern traits which seem most Mexican are generally not represented in the Southwest, and vice versa,[19] so that a theory of circuitous diffusion around the South Texas area also seems contrary to the facts. If there were evidence of maritime movements along the shores of the Gulf or across it, one could more readily assume these as the mechanism of Mexican-Southeastern connections. Mexico City, Santa Fe, and Natchez form very nearly an equilateral triangle; and from Tampico to the mouth of the Mississippi is no farther, even by land, than from Mexico City to El Paso.

The cultural backwardness of the Northwest Gulf area—or, at any rate, of its Texan portion—is also difficult to understand on environmental grounds. The rainfall ranges from 50 inches at the mouth of the Sabine to 20 at the mouth of the Pecos, the lower Rio Grande having about the mean. The precipitation-evaporation ratio ranges from semihumid to semiarid (map 13). Much of the area is agriculturally productive under Caucasian settlement.

The plant cover is variously described, so as to suggest local peculiarities difficult to fit into broad schemes of classification. Shreve follows the Rio Grande down on the north side with a Texas Succulent Desert and Texas Semidesert (map 5), where Shantz and Zon assign Creosote Bush and Desert Mesquite Savanna, with areas of Desert and Tall Grass (map 4). Along the coast they are in not much better agreement. Harshberger (map 2) emphasizes a Mexican constituent in the flora as far as San Antonio and Matagorda Bay.[20] Map 14 shows microphyllous trees following the coast to the eastern edge of Texas and extending north into the Panhandle, and the lowest part of the Rio Grande Valley as the region of maximum accumulation of such tree species in the United States. Map 12 shows species of southeastern deciduous trees extending, though in diminishing numbers, south to the Rio Grande and west to 104°. There does seem general agreement that from the Guadalupe or Nueces west and south the natural plant cover is xerophytic in spite of the considerable precipitation—evidently on account of dry winters and rapid evaporation

[18] ICA 20 (1922, Rio de Janeiro):53–59, 1924.

[19] Thus scaffold sacrifice and ball courts, on the one hand; the metate, masonry, and masks, on the other.

[20] Harshberger, work cited (see above, p. 14), pp. 659–660; also pp. 514, 528–531.

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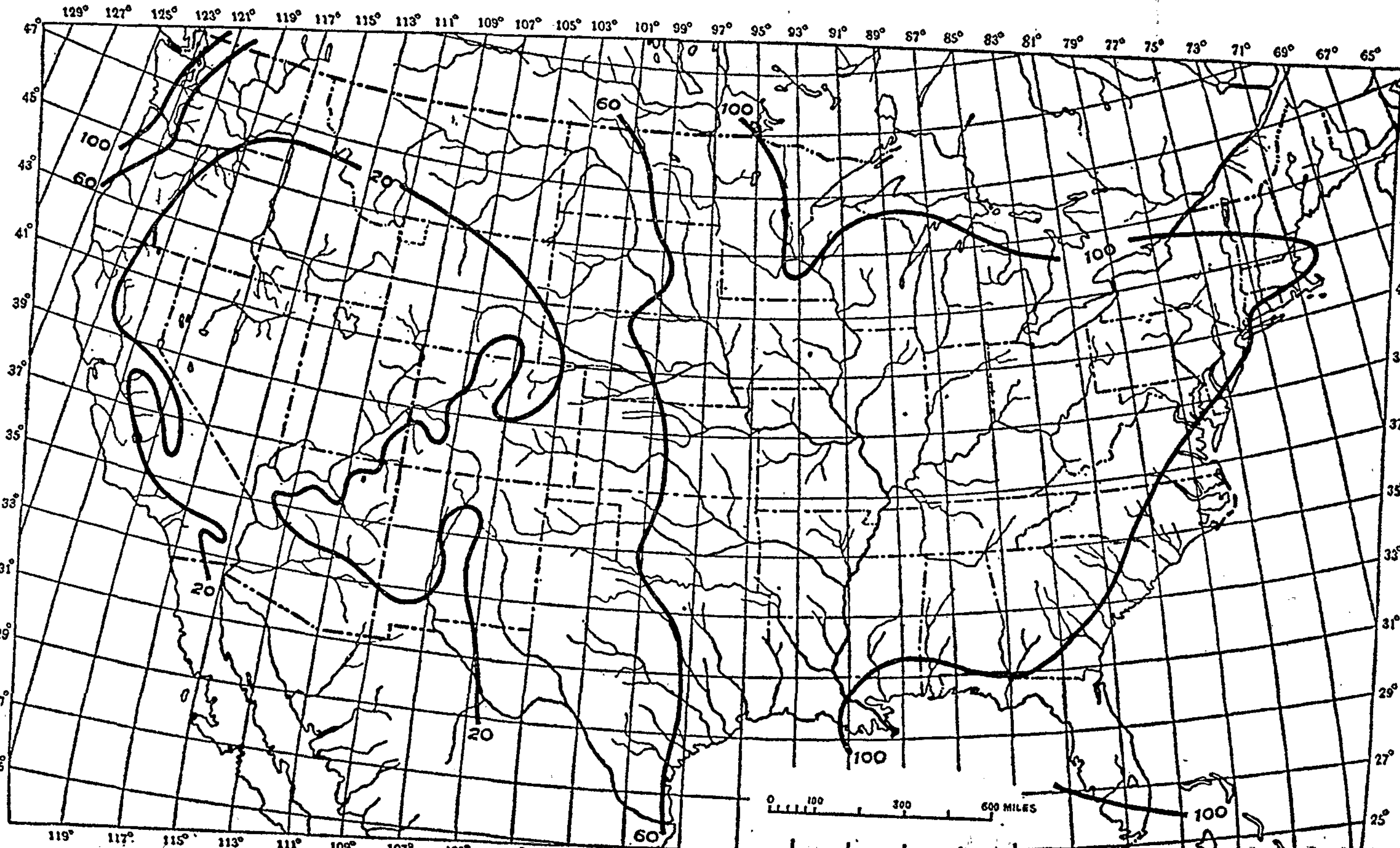
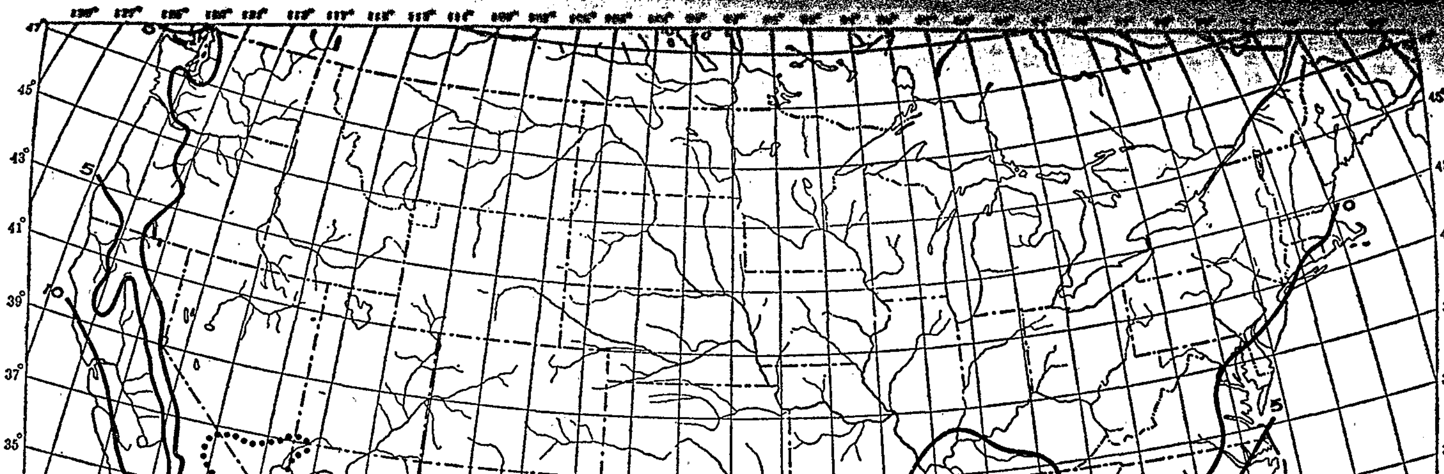


Map 13. Precipitation–Evaporation Ratio, from Livingston and Shreve. Somewhat ... two provinces, roughly following the famous hund... [illegible]



Map. 14. Number of Species of Evergreen Broad-leaved Trees (solid lines) and Microphyllous Trees (dotted lines); from Livingston and Shreve. Notable are the divergence of South Florida and South Texas from the Southeast as a whole, though in opposite directions; the relative strength of California in broad-leaved evergreens; and the transitional participation of the Sonora-Gila-Yuma (but not Pueblo) subarea of the Southwest in both the California and the South Texas nondeciduous silva.

in summer; and that to the east of these streams savanna or scrub or woodland (cross timber) prevails over true forest. But there certainly vegetational unity underlying the cultural area. Perhaps it was not so much culture unit as really a sump—a series of somewhat varying habitats non which was favorable to the major subsistence patterns worked out in Mex the Southwest, and the Southeast.

In contrast to Linton, who sees most specific Mexican traits that occu the Southeast lacking in the Southwest, and vice versa,[21] Swanton is "inclin to regard most Mexican influences as having been introduced [into the Sou east] via the Pueblos rather than by the more direct route [of south Texas]." Swanton's formulation of the limits of the "highest levels of the cu ture of the Southeast" is also worth summarizing here with special refere to the suddenness of the transition toward the west:[22]

The lower Mississippi Valley; "back from" the Gulf Coast eastward to the Atlantic cluding northern Florida; *formerly*, most of the Ohio Valley; the Iroquoians formin marginal territory. Along the Atlantic Coast the Southeastern culture shaded out mo more rapidly. To the northwest, it extended "not much beyond the Mississippi"; to t west, "it ended rather abruptly with the Caddo tribes" of northwestern Louisiana and nor eastern Texas (the habitat of these tribes falling short of the Trinity River and not reac ing the coast); on the Gulf, it "cannot be traced beyond Vermilion Bay, Louisiana."

4. RED RIVER AREA

The Caddo group is usually considered transitional between the Southeast and the Plains. These people were subjected to strong Spanish and French influences from the end of the seventeenth century, their tribal organizations have been partly dissolved and reconstituted, and their culture is much broken. They farmed, made pottery and wicker and twill basketry, lived in village settlements that were sometimes straggling or scattered, built large domed houses of thatch, erected mounds, kept perpetual fire burning in a temple or communal structure, acknowledged the authority of an intervillage or inter tribal religious head, celebrated a first-maize and harvest festival, sometimes tortured or sacrificed captives on the frame. This culture obviously is basically Southeastern, with affiliations to the Natchez rather than the Muskogian tribes, but with some of the Natchez specializations lacking and with certain differentiations of its own, such as the predominant use of grass houses. Wissler puts the modern Caddo, Kichai, Waco, Tawakoni into his Southeastern area, the Wichita into the Plains; the separation of the latter seems arbitrary, except perhaps for modern times.

This was a deciduous forest area. By the Shantz-Zon classification (map 4), it lay prevailingly in the Oak-Pine Eastern Forest, partly also in Oak-Hickory, Southeastern Coniferous, and River-bottom Forest. In the nineteenth century some of the western tribes were in the prairie extending south through Dallas and Fort Worth and that about the Wichita Mountains. It is not wholly clear whether these were Caddoan habitats in native times, and, if so, whether

[21] AA 28:464, 1926.

[22] ICA, 1924, as cited. This delimitation differs somewhat from the one in BAE–B 42: 673–726, 1928, which has been discussed above.

the tribes in them depended more on farming or on bison hunting. All the areas in question lie east of the hundredth meridian and are cultivable.

The limits of this subculture are difficult to draw on the north and east. The Quapaw-Arkansas, the southernmost Siouan people west of the Mississippi, may have belonged either in this or in the Southeastern area: they used palisades, for instance.[23] The Osage are also difficult to place. Thanks to La Flesche, we know several of their rituals in detail; but these give relatively few indications of the type of the culture as a whole. Osage organization into patrilinear clans and exogamic moieties is "Central" Siouan, but certain features, such as the relating of the moieties to peace and war, recall the Southeast. The situation of the central Osage settlements on the Osage River well inside of Missouri points to affiliation with the Siouan tribes rather than those to the south. The large extent of territory ascribed to them on the map, following Mooney, is probably misleading in this connection. The nucleus of Osage habitat was in woodland.

Well to the northwest of the Osage, in the prairies of the middle Platte drainage, were the Caddoan Pawnee, who are particularly difficult to place. Usually reckoned loosely with the Plains tribes, they show a village organization, matrilineate, captive sacrifice, star symbolism, and similar traits which either relate directly to the Caddo-Natchez culture or at any rate set them off from both the Prairie and Plains tribes. There is some tendency to regard the Pawnee as the eastern tribe showing most relations to the Pueblos, and as possible intermediaries between the Southwest and the Plains and Southeast. But the general cast and emphasis of Pawnee culture are certainly very different from Pueblo, or even from that of the eastern Apache. In connection with this problem the question of the certain identification of the Pawnee and their territory in the period of discovery is important. Their nineteenth-century habitat centered in middle Nebraska, but their earlier territory has been placed in eastern Kansas. If the Caddo extended farther north into Oklahoma the two groups may still have been adjacent not many centuries ago. At any rate, there is no reason why contacts between them should not have remained open. If the authority for map 1—here, Mooney—is right, most of the intervening area was thinly occupied even at the beginning of the nineteenth century, constituting back country of the Osage and Kansa, the latter a small tribe. It seems altogether likely that Pawnee culture was basically a variant of Caddoan, but that on account of its more northwesterly situation, and perhaps relative freedom from exposure to Spanish and French contacts, it came more largely under Plains influences after the horse became common.[24]

To summarize: provisionally the Quapaw may be reckoned as belonging

[23] Or again, they may have belonged with the other "central" Siouans in the Prairie area. Little is available about them ethnologically, and my assignment of them is no more than a guess.

[24] Much new light is shed by Strong's Introduction to Nebraska Archaeology, SI–MC 93, no. 10 (publ. 3303), 1935. He holds the Pawnee to have been long in Nebraska, and to have undergone a cultural florescence in the prehistoric period from 1540 to 1682, decline setting in after the introduction of the horse. The Upper Republican archaeological culture is presumably a prehistoric stage in Pawnee development, and is attenuated Southeastern. See especially Strong's pp. 9, 13, 15, 55, 245, 272, 273, 296.

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with the Caddo (4a); the Osage, with the southern ("Central Siouan") Prairie tribes (6a); the Pawnee as forming a subtype (4b) of Caddo culture with recent horse-bison culture overlay.

5. PLAINS AREAS

The viewpoint from which the Plains are here treated has been previously outlined in connection with a review of the cultural relations of the Southwest. Essentially the view held is that the Plains culture has been one of the well-developed and characterized cultures of North America only since the taking over of the horse from Europeans, and that previously there was no important Plains culture, the chief phases in the area being marginal to richer cultures outside. In brief, the historic Plains culture was a late high-pressure center of culture in a region which previously had been rather conspicuously low-pressure. That there is nothing revolutionary in such a view is shown by the fact that as long ago as 1916 Sapir in a sentence analyzed the recent Plains culture into non-Plains origins.[26] The reason why he did not follow the matter farther is that his essay was concerned with method rather than fact.

The Plains tribes, along with the Pueblos, Northwest Coast Indians, Californians, and Eskimo, are among the most intensively investigated in America. The reason has been the incentive to study extended by the saturation of their late culture, plus its preservation well into the nineteenth century. Even today it is possible to find informants who have experienced the old life and are able to give clear, vivid accounts of it. The returns being richer, more ethnological interest was directed to them. Specialization followed, and on that some inevitable loss of perspective. This relatively rich culture, so much more satisfying to deal with than the remnants of that to the east or the meager ones of the Plateau and to the far north, began to be intimately dissected in some of its aspects—but mainly with reference to itself, not to its outward relations. Spier on the Sun dance,[27] Lowie on age societies,[28] Wissler on shamanistic and dancing societies,[29] analyzed historic developments within the culture as it was. How the culture as a whole came to be, was less and less asked. Wissler perhaps did most both to extend and to fix the concept of the Plains area, and to define its center.[30] He even went so far as to indicate that its culmination lay most probably among the Oglala Teton Dakota, with Arapaho, Cheyenne, and Crow participating next in order.[31]

Another factor contributed to the essentially static conception. Wissler found that when the Plains tribes took up the horse they did not make their culture over.[32] Travois transportation, the tepee, the bison hunt under control,

[25] UC–PAAE 23:375–398, 1928.
[26] Time Perspective in Aboriginal American Culture, Canada Geol. Surv., Mem., 90 (Anthr. Ser., no. 13):45, 1916.
[27] AMNH–AP 16:451–527, 1921.
[28] Same, 11:877–984, 1916.
[29] Same, 11:855–876, 1916.
[30] AA 16:447–505, 1914 (449–451 and map); The American Indian.
[31] AA 16:473, 1914.
[32] AA 16:1–25, 1914.

had all been there before. The horse was simply put into the old patterns and made these more productive. It was easier for the tribes to do this than to evolve or adjust to a new set of patterns. As an analysis of cultural dynamics or social psychology, this was a valid demonstration. Too largely, however, it seems to have been tacitly interpreted also as a historical conclusion, that Plains culture after the horse went on much as before. Very little reflection shows that this could not have been so. Could any good-sized group have lived permanently off the bison on the open plains while they and their dogs were dragging their dwellings, furniture, provisions, and children? How large a tepee could have been continuously moved in this way, how much apparatus could it have contained, how close were its inmates huddled, how large the camp circle? How often could several thousand people have congregated in one spot to hold a four or eight days' Sun dance? By the standard of the nineteenth century, the sixteenth-century Plains Indian would have been miserably poor and almost chronically hungry, if he had tried to follow the same life. Showy clothing, embroidered footgear, medicine-bundle purchases, elaborate rituals, gratuitous and time-consuming warfare, all these he could have indulged in but little—not much more than the tribes of the intermountain or southern Texas regions.

In short, ethnologists have gradually become so interested in the specialized manifestations of Plains culture that they have forgotten that largely these are definite luxury developments possible only with the subsistence basis of life adjusted unusually favorably and dependably. That such an adjustment could have been made through the mechanism of dog traction by a migratory people dependent on a migratory animal for their food, is highly problematical.

With the horse and all its culturally intensifying consequences taken away from the tribes of the western or true plains, such as the Blackfoot, Crow, Teton, and Arapaho, these have left but a meager stock of culture. The same subtraction from the agricultural Prairie tribes—Mandan, Santee, Pawnee, or Omaha—would leave them far more. In the sixteenth century, then, I believe that culture within the so-called Plains area was richest and centered in the prairies, not the plains, and was not primarily but only incidentally based on bison subsistence. But the Prairie tribes show affiliations to both the Southeast and the Northeast; and the Plains culture is thereby made doubly dependent. In the sixteenth century, instead of being a climax, it was not even subclimax: it was peripheral.

If it seems unlikely that a ritual as elaborate as the Sun dance grew up in a few hundred years, the answer is twofold. First, many of its elements—torture, painting, altar, bundle—occur in other associations and may be ancient, while the complex of elements that constitute the ritual is younger. Secondly, that ceremonial elaborations in this area can be highly unstable is evident from comparison of societies; for instance, the age-graded ones of the Arapaho and Atsina (Gros Ventre).[33] These are alike enough to make it certain that they represent, in the main, deviations from an original common system. The

[33] AMNH–AP 1:141, 269, 1908;

two tribes are closely related in language, and the Arapaho regard the Gros Ventre as the northernmost of their five divisions. The two groups had separated ranges as early as 1750, but may well have been still a unit in 1600 or even 1650. With the ensuing geographic separation to help, the dialectic divergence between them could easily have been achieved by 1900, it would seem. The differences between the society systems of the two tribes comprise added or dropped societies, transfer of functions from one society to another, and transposition of societies in the age order. What is an elderly, important group in one tribe, is a young group, near the beginning of the sequence, in the other. It is difficult even to imagine a mechanism by which a change like this could have taken place in a system after this had become based on the principle of seniority. It is much as if in some European countries Wednesday came after Thursday. Yet the change is there. If a now closed system could alter as this one has in two to three centuries, a new one could certainly crystallize as quickly, whether it be a society series or a Sun dance.

What it is suggested happened is that not only ritual complexes, but indeed all sorts of cultural patterns, quickly blossomed out in the plains after the introduction of the horse had converted a strugglingly precarious or seasonal mode of subsistence into one normally assured, abundant, and productive of wealth and leisure. This development was strongest where the effect of the horse was greatest, in the true or western short-grass plains. Here, then, there rapidly grew up a new center—an active crater of culture, to use Wissler's figure. This in turn reacted on the agricultural tribes of the prairies, strongly influenced the nearer intermountain tribes as well as several at the edge of the northern forest, and about 1800 sent its influences down the Columbia to the Cascades. The new culture was not only active and intensive, it was still expanding when white settlement killed its roots.

It is scarcely contendable that the western plains were wholly uninhabited before the horse was available. Agricultural groups from east and west probably strayed in now and then and tried to farm. Small groups could make a living by combining bison and river-bottom hunting with berry and root gathering. But the population probably clung in the main to the foot of the Rockies, where wood, water, and shelter were more abundant, fauna and flora more variegated, a less specialized subsistence mechanism sufficient; and from there they made incursions into the plains to hunt their big game, much as the prairie and parkland and even forest tribes ranged in from the east in the historic period. Such habits would account for the dog travois and folding tent. They would give to the plains some human utilization and occupancy. They would not leave room for a specialized culture to center there.

Wissler's views on the Plains have undergone decided changes. In 1907[34] he advocated substantially the position here maintained. He even spoke of the plains as uninhabited, and the moving out into them as due to the horse.[35] In 1914[36] he held that the horse "is largely responsible for such modifications and realignments as give us the typical [western, Blackfoot to Comanche] Plains

[34] ICA 15 (1906, Quebec):39–52, 1907. [35] Same, 44, 45. [36] AA 16:1–25, 1914.

culture of the nineteenth century";[37] and that the "vigor and accentuated association of traits" of this culture could not have been achieved without the horse. On the other hand, "no important Plains traits except those directly associated with the horse [like saddles] seem to have come into existence" after its introduction; "all the essential elements of Plains culture would have gone on, if the horse had been denied them"; and "from a qualitative point of view the culture of the Plains would have been much the same without the horse."[38] While no "important traits, material or otherwise, were either dropped or added," yet "the relative intensities of many traits were changed, giving us a different cultural whole," and leaving to the horse its strongest claim "as an intensifier of original Plains traits."[39] Horse introduction is also held responsible for "reversing cultural values," that is, causing old nomadic (Shoshonean) cultures to "predominate" over the "previously dominant sedentary cultures of the Siouan and Caddoan tribes."[40] In short, a new culture grew up wholly out of old elements through the introduction of the horse. A later paper in 1914,[41] and The American Indian in 1917 and 1922, go further in that they accept this new culture almost as if it were timeless. The purely horse-using tribes are described as forming the "center" of the area, and tribes like the Omaha and Pawnee as culturally less typical and dependent. This is of course a static interpretation of a historic moment. In short, Wissler's first approach was historical; his second, historical and analytic; his third, descriptively analytic.

Returning to the primary consideration, we can summarize by saying that in the main, in the prehistoric period, the cultural emphasis of the conventional "Plains culture area" region lay on its borders; the plains themselves were a cultural margin.

From this aspect, the so-called Plains area breaks up into several smaller areas. One is adjacent to the Southwest; another, to the intermountain regions farther north; on the east there can be recognized, besides the Caddoan or Red River area which is essentially Southeastern, a central Siouan, a north Siouan, a village, and a Canadian Prairie area.

5a. *Southern Plains*

This is the area adjacent to the Southwest and more or less dependent on it. Its modern representatives are the Comanche, Kiowa, and Kiowa-Apache. The Lipan and possibly the Tonkawa may have belonged here rather than in the South Texas area, at some time in their career; so may part of what are now recognized as Apache, the Mescalero and Jicarilla. These Apache very likely represent rather well in some ways the status of the old Southern Plains culture. The Spaniards called them, or related bands, Llaneros and Vaqueros. They were mountain tribes, marginally Southwestern, fronting on the plains and hunting bison. The Kiowa-Apache look like one of these eastern Apache bands, who, after they had the horse, committed themselves definitely to the bison and the plains, and on account of numerical weakness joined themselves to the Kiowa. The other eastern Apaches clung to their mountains, or were

[37] Same, 17. [38] Same, 16, 17. [39] Same, 18, 19. [40] Same, 25. [41] AA 16:447–505, 1914.

beaten back into them, continuing to use the plains as an auxiliary range. If we knew more about them and the Kiowa and Comanche, we should probably see many resemblances. Their style of bead embroidery is certainly similar and, in its outlining quality, distinct from that of the more northerly Plains. Linguistic affiliations point the same way. Mooney accepts the Kiowa tradition of a northern origin; but the Kiowa language seems to be related to Tanoan. Comanche is nothing but a Shoshone dialect. The tribes in the historic Southern Plains group thus appear to connect in origin with others in or beyond the Rockies. Even facially the Kiowa and Comanche resemble the Apache. This may or may not be due to common heredity. It certainly holds for the physiognomic expression, which argues a similar life.

The Comanche seem not to have appeared in their historic habitat until about 1700. This lateness corresponds with the close similarity of their dialect to that of the Wind River Shoshone. These people, in turn, live in an area which belongs to the Rocky Mountains physiographically, with the Basin vegetationally: it is sagebrush, not grassland. Wind River culture must have been of pretty pure Basin type until the horse came in and they began to take on an overlay of Plains culture. It was about this time, apparently, that the Comanche moved south from them. The Comanche are much better known historically than ethnologically. A monographic study of them is perhaps the greatest desideratum, next to the publication of the full Murie Pawnee materials, in the general Plains area.[44]

The ecological environment, especially of the Comanche, is not uniform. They extended from the true plains into desert savanna and scrub timber (maps 2–5), which again suggests a remnant of habits preceding their adoption of horse-bison culture.

5b. *Northern Plains*

This is the area of the culture whose rapid and expansive development within the historic period has brought about the current concept of a large "Plains" culture area. Wissler considers that eleven tribes manifest the typical culture of the "Plains." Three of these are in the Southern area just discussed. The other eight are the Sarsi, Blackfoot (including Piegan and Blood), Atsina, Arapaho, Cheyenne, Crow, Teton Dakota, and Assiniboin. These in fact are the eight, or perhaps seven without the Assiniboin, which I would reckon as constituting the valid Northern Plains group. It was among them that the Sun dance apparently originated and certainly flourished most exuberantly.

There is a good deal of evidence of flow into the area. The Sarsi are obviously a northwest Athabascan tribe that left its kinsmen in the forest to attach themselves to the Blackfoot. The Crow are linguistically closest to the Hidatsa. They look, therefore, like an agricultural group that had early ventured to give up farming for the plains life—probably even some centuries before they got horses. The Assiniboin speak a Yanktonai (Prairie) Dakota dialect. The Teton Dakota, according to Mooney, did not begin seriously to push west of the Missouri until about 1750.[45] For the Cheyenne there are traditions as well as records[46] of movement from the prairies into the plains.[47]

This leaves only the Arapaho-Atsina and Blackfoot-Blood-Piegan without known indications of entry into the area. These groups are both Algonkin, but of speech highly diversified, as well from each other as from the great body of Algonkin; much more so than Cheyenne. Differentiation of such strength does not generally occur in languages that remain in geographical contiguity and intercommunication with the parent stock. It does often proceed with rapidity in languages that are subjected to contacts principally with alien idioms.[48]

[42] The difference will perhaps prove to be partly due to relative absence in the south of antecedent porcupine-quill embroidery.

[43] J. P. Harrington, AA 12:119–123, 1910. Mooney and Harrington may both be right, the tribe being southern in origin but having temporarily moved north and then south again, legend retaining only the last of the events. Mooney has them in contact with the Spanish frontier of New Mexico in the first half of the eighteenth century, in the Black Hills about 1775, on the North Platte in 1805. He puts a residence on the headwaters of the Missouri earlier than any of these habitats, but it may have fallen between the first and second.

[44] Fortunately this is no longer true. G. Wagner has made such a study, and so has a Laboratory of Anthropology party under Linton.

[45] The lateness of this date may possibly be somewhat exaggerated, but the statement seems to be essentially true. Grinnell (passage cited in next footnote) would make the date even later—after 1800.

[46] G. B. Grinnell, The Cheyenne Indians, 1:1–46, 2:382–384, 1923, has collected a mass of material. He holds, no doubt with reason, that the Cheyenne did not move as a unit, but by villages and bands, which successively caught up with or overtook one another; that some of them farmed until well after 1800; and that they met (reunited with) the Suhtai or Sutaio only after they had crossed the Missouri, in the Black Hills country. The farthest eastern point possibly attributable to the Cheyenne, but not authenticable, is Mankato, Minnesota. This is in timber, just east of the prairie. Yellow Medicine River (a tributary of the Minnesota) in southwestern Minnesota seems fairly authentic as a habitat, and already lies in prairie. Then follow the area west of Lake Traverse in South Dakota, the head of Maple Creek (western affluent of the James), and Sheyenne River (western tributary of the upper Red River). The last two are in North Dakota, and all three in prairie. All habitats from here on lie in short-grass plains. Next follow both banks of the Missouri, in the region of the mouths of the Cannonball, Grand, Owl, and Big Cheyenne rivers; thence up these rivers to and beyond the Black Hills, that is, the country to north and east of these mountains back to the Missouri. This was the main habitat in the period around 1800. Except for temporary movements of bands, there seems to have been no general drift to or south of the Platte until about 1826. Even this drift applied to only part of the tribe, since the division into Northern and Southern Cheyenne began as late as about 1830. Early enemies were the Assiniboin and Crow; friends, the Dakota, Mandan, and Arikara. In the Black Hills region the Cheyenne were associated with the Arapaho, Kiowa, and "Comanche." So far Grinnell. The Black Hills evidently provided on a minor scale the same sort of advantages of shelter, fuel, and small game as the foothills of the Rockies supplied to the early tribes of the western plains. The total Cheyenne migration was about four hundred miles, with a transient bend northwest at the beginning to include part of the Red River Valley but in the general direction of west; until the due south swing after the first quarter of the nineteenth century. Even in their earliest determinable habitat the Cheyenne were separated by Siouans (Assiniboin, Dakota, Iowa) from all Central and Eastern Algonkins (Cree, Ojibwa, Sauk, Kickapoo, Illinois). The upshot is: a prairie-farming people, separated and well differentiated from their ancient woodland kinsmen, yielding very hesitantly to the lure of the western bison after they had horses in the eighteenth century, and not wholly committing themselves to the "typical Plains" culture until well into the nineteenth.

[47] Cheyenne speech is much closer to Central-Eastern Algonkin than is either Blackfoot or Arapaho. It is much more different, however, than it could have become during a separation of only two or three centuries. The purely linguistic inference thus is that the Cheyenne, though recent in the plains, lived, before that, somewhat apart from the Central Algonkins of the woodland; therefore most likely in the prairies. This tallies with the historical inferences in the last preceding footnote.

[48] This does not necessitate that form or even content is borrowed. It seems that the stimulus of alien contact is often sufficient to set up new processes, which go their own way. If taking over of vocabulary also occurs, it is evidently due to cultural rather than linguistic causes. The outright borrowing of grammar on any considerable scale is a putative phenomenon whose actuality remains to be proved.

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If the Arapaho and Blackfoot drifted to the base of the Rockies a fairly ... time ago, we should have them fulfilling all the geographical and histo... conditions which in theory would be needed to account for their set-off ling... tic status. Moving them into their recent habitat since the introduction of ... horse, or even a century or so before, would not allow time for the exist... degree of diversity, according to all authentic precedent on the rate of al... tion of speech. We may therefore regard these two groups of tribes as anc... occupants of the northern true plains, or rather of the foothills of the Rock... and the plains tributary thereto. The Blackfoot made much use of the mou... tains in the historic period; like the Mountain as distinct from the R... division of the Crow. It cannot be asserted that the Blackfoot and Arapa... groups were the only ones formerly in the northern plains. They are the on... ones who we can be reasonably sure were there. The Crow may have been ... them. There may have been other tribes who have since disappeared or be... expelled or absorbed. The Sutaio among the Cheyenne might possibly ha... been the remnant of such a group.

Of the seven Teton subtribes, the Oglala seem to have been culturally ... most vigorous in the nineteenth century. They were also the advanced outpo... in the southwestward push away from the old Dakota prairie-and-forest hab... tat. This coincidence is evidently significant of the recent growth of cultura... intensity in the plains proper.

The Northern Plains subarea is one of short grass, with grama and buffa... grass characteristic.[49] It covers substantially all this short-grass territory e... cept for parts within the Southern Plains and Village Prairie subarea. Th... stream bottoms contain cottonwood growth nearly but not quite to the Rockies. On the west, the short grass generally abuts on mountain pine.

The one region in which the buffalo grass changes to sagebrush is in Wyo... ming. Here were the Wind River Shoshone. Their country is mostly open plains lying behind outlying broken ranges of the Rockies and draining through the Big Horn, Powder, and North Platte into the Missouri. But it is sagebrush-covered, like the habitat of all the Shoshoneans in the Basin.[50] This is an unusually neat instance of ecological conformity. The Wind River Shoshone, in other words, belong to the Great Basin culture, with a recent veneer of Northern Plains culture. Wissler virtually recognizes this—although he includes them and the Ute in a western border division of his Plains area[51]—when he mentions their basketry, mat houses as well as tepees, greater use of deer and small game and seeds than of bison, and half-hearted Sun dance.

The natural or ecological boundary between Northern and Southern Plains may be conjectured to have lain nearly at Pike's Peak and just north of the

[49] Shantz and Zon, 18.

[50] The Northern Arapaho, in governmental times associated with the Shoshone on the Wind River Reservation, are known as "sagebrush people" among the former and present Arapaho divisions.

[51] 1922, p. 220. His map includes in this western "Plains" border, Gosiute, Bannock, Flathead, with Nez Percé and Kootenay on both sides of the boundary. His 1914 map leaves Kootenay, Flathead, and Nez Percé in the Plateau, but comprises the Bannock, Gosiute, and even Southern Paiute in the Plains. The Sarsi are mentioned in both publications as among the typical tribes constituting the culture center, but are not so indicated on the map.

Arkansas headwaters. From here south, the Shantz-Zon map shows a belt of pinon-juniper woodland—a characteristic Basin-Southwest association—intervening between the grassland and the pine forests of the higher mountains. To the north, the forest meets the plains, except where the sagebrush extends out into the level land in Wyoming. If this ecological indication held for human occupation, the southern limit of the Cheyenne and Arapaho should have lain a little farther north than is shown by the map, which is based on Mooney's reconstruction for 1832. If the upper Arkansas at an earlier time could be attributed to the Kiowa or some other Southern Plains tribe, the ecological-cultural fit would be exact.

On the northeastern flank of the plains, Wissler recognizes the Plains Cree, Plains Ojibwa, and perhaps part of the Assiniboin as possessing many traits of the forest tribes.[52] A glance at the map shows the first two as mere border fragments of the great northern forest Cree and Ojibwa groups. Both are said to have pushed westward in the historic period, at the expense of Athabascans and Dakota. Their entry into horse culture was probably part of the same movement. The Cree and Ojibwa moved out into tall grass or prairie or poplar savanna, however, not into the true plains, and seem never to have lost contact with the woods and their kinsmen therein. The people whom they crowded were the Assiniboin. Even at that, half or more of the territory credited on the map as remaining to the Assiniboin was in the prairies. The Assiniboin, then, are a people only partly in the true plains in the recent period, and perhaps not at all in them formerly. This is confirmed by their close dialectic affiliation with the Yankton-Yanktonai Dakota, who are a prairie people.

On the other hand, the Mandan, Hidatsa, and Arikara, the three "village tribes," farmed and built earth houses, but lived in the short-grass area. Their territories as shown on the map exaggerate the situation, since they are mostly hunting range. The settlements of the tribes lay on the Missouri, not far west of the prairie. Also, not far downstream, the prairie swings westward across the Missouri to take in most of the Niobrara. If the Mandan had come up the Missouri from a little farther than they have been traced,[53] or if they had come a short distance straight west, they would have come out of prairie. The Arikara, in the light of their close speech relationship to the Pawnee, may be assumed to have moved out of the prairie fairly recently. Here, then, we have something special: agricultural prairie tribes who entered the plains but retained their prairie culture. The cause is not clear, but it was evidently not the horse nor wholly the lure of the bison. It may have been hostile pressure from downstream or the east; or a mere experiment, before or after the horse. Certainly it was an only half-successful experiment once the neighboring tribes got their horse culture fully under way, if the rapid wasting away of the three village tribes after 1800 is an index. Also, the three village tribes did not need extensive farm land and planted in bottoms, so that it mattered little to them whether the rest of their range lay in short or tall grass.

[52] 1922, p. 222.

[53] The mouth of the White River, in South Dakota.

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The true Plains areas, then, may be classified as follows:

5a. *Southern Plains:* Comanche, Kiowa (including the Kiowa-Apache).
5b. *Northern Plains:* Arapaho, Cheyenne, Teton Dakota, Crow, Atsina, Blackfoot, Piegan, Sarsi.

6. PRAIRIE AREAS

The prairie peoples are more difficult to classify than are those of the plains. Just as the prairie shades through river-bottom woodland eastward into [illegible] land and deciduous forest, so with the culture. When the Northern Plains [illegible] culture approached its nineteenth-century climax, reflexes from it penetrated the Prairie cultures, which were already crumbling under American pressure. General studies based on intensive ethnological field work deal almost wholly with Northern Plains tribes, virtually all of whom are monographed, whereas on the Prairie side there is practically but one—the Omaha.

Roughly, the Prairie tribes correspond to the fourteen agricultural ones listed by Wissler as on the eastern "border" of the heart of the "Plains" area. From these, however, the Wichita must be eliminated; the Osage, as already mentioned, are doubtful as a timber people with possible Southeastern leanings; Pawnee culture seems sufficiently distinctive to warrant its being set apart, as discussed under the Caddo. With the Osage counted in, this leaves twelve Prairie tribes or tribal associations, all of them Siouan with the exception of the Arikara. These may be subdivided into three groups: one ("Center") consisting of the Santee and Yankton-Yanktonai Dakota; a second ("Village"), of the Mandan, Hidatsa, and Arikara; and a third ("Southern") of the southern trans-Mississippi or so-called "Central" Siouan tribes.[55]

Still farther north and northwest are the Assiniboin, Plains Ojibwa, and Plains Cree, already mentioned as not in the short-grass plains. The prairie here swings westward at the expense of the plains. Probably all Ojibwa and Cree were timber people in native times. The fur trade and firearms stimulated them to flow westward, the Cree penetrating far into Athabascan territory. Some got out into the plains with the horse and stayed there. These are our Plains Cree and Ojibwa. The Assiniboin, too, seem to have flowed westward when they got horses.[56] It was evidently from them, and possibly from the Blackfoot, that the Cree and Ojibwa bands who had spilled into the open prairie got their tepees and other elements of "Plains" culture, while the more westerly of the Assiniboin in their turn were being affected by the active culture developing on the northern true Plains. This northernmost prairie area is therefore in its cultural history directly marginal to the woodland, perhaps more dependent on it than are the prairie areas to the south. Moreover, the forest to which it clings is coniferous and unfavorable to maize; that with which the more southerly prairie areas were in relation is deciduous and generally profitable under maize cultivation (map 27).

To the east of the central and southern Prairie areas lay two others which

[54] The American Indian, 1922, p. 220.

[55] "Central" with reference to the stock as a whole, "Southern" with reference to the current concept of the Plains area.

[56] Boas, BAE–R 41, map, carries their territory before 1800 westward up the Saskatchewan and Athabasca rivers to the Rockies.

were in close relation with them: Wisconsin and Ohio Valley. The former is the wild-rice district west of Lake Michigan. It happens that we possess good studies of three groups in this area, the Menomini, Winnebago, and Sauk and Fox. Their culture shows marked resemblances to the Prairie culture. The Ohio Valley area seems less similar. This is surprising, for several reasons. The Wisconsin area was wooded; the Illinois and northeast Indiana parts of the Ohio Valley area were prevailing prairie. Illinois lies between Wisconsin and the Southern Prairie area. Part of the Santee group of Dakota lived in the forested wild-rice area. It might therefore be expectable that the Central (Dakota) Prairie affiliated with Wisconsin, the Southern (Dhegiha, Chiwere) Prairie with Illinois; which seemingly is not what occurred. The legendary movements of the Dhegiha and Chiwere down and out of the valley of the Ohio would raise similar expectations. The factors concerned with these anomalies will be touched upon again in connection with the Illinois-Ohio area.

It is, however, clear that the prairie cultures three hundred years ago were connected more closely with the woodland ones to the east than with those of the plains on the west. Their bison hunting and tepees and travois were ancillary. Many parts of the prairies contained a fair amount of woodland; some of the tribes reckoned as of the prairie group actually lived rather in the forest; and one of the woodland culture areas was part prairie. The tall-grass tracts, in short, were culturally associated with the woodland; no doubt because the basis of both culture and subsistence had been worked out in prevailingly wooded territory, with agriculture. When bison exploitation through the horse developed a new primary subsistence type on the plains and caused a culture with new emphasis values to evolve there, the prairie tribes were affected because their habitat was sufficiently similar. Previously, the similarity in ecology had counted for less because the true plains were too extreme an environment for the thriving of cultures evolved in and primarily adapted to a generally wooded habitat and following farming.

The situation in the Prairie area, then, is this:

6a. *Southern Prairie or "Central Siouan" subarea:* Kansa, Missouri, Oto, Omaha, Ponca, Iowa, perhaps Osage; Pawnee a separate unit with Caddo-Southeast relations. Deciduous park and bottom land; settlements and farms usually attached to this; houses earth covered; patrilineal, exogamic, totemic sibs and moieties, spatially grouped in theory; Sun dance mostly absent; well-defined tribes; noticeable resemblance to Wisconsin area culturally.

6b. *Central Prairie subarea:* Santee and Yankton-Yanktonai groups of Dakota. Affiliations of closely related ethnic groups, or tribes expanded into quasi confederacies still loosely cohering; social organization loose; resemblance to Wisconsin tribes in subsistence habitus rather than formal culture.

6c. *Village Prairie subarea:* Mandan, Hidatsa, Arikara. Compact village tribes, with earth lodges in palisaded enclosures, in the historic period in the plains rather than prairies, some of them matrilineal; agricultural; possessing age-graded societies; evidently an islet detached from its former habitat and cultural affiliations; of composite origin, Mandan and Hidatsa belonging to different Siouan divisions, and Arikara being Caddoan.[57]

[57] The historic nucleus is undoubtedly Mandan-Hidatsa. Arikara speech is practically Pawnee. They must therefore be a recent Pawnee offshoot. Joining the Mandan and Hidatsa, they became somewhat assimilated to them, and probably even more associated in the minds of travelers and ethnologists than in fact. For instance, they have no age-graded societies.

Dakota which ultimately led them into a separate history. Somewhere in the vicinity, more or less west of the Dakota and south of the Assiniboin, and presumably in prairie, are likely to have been the Cheyenne, already detached from the main Algonkin body in affiliations and probably in territory, and not yet in serious contact with Arapaho or Blackfoot across the other side of the plains. Cree and Ojibwa were still wholly woodland peoples.

Some of these situations and conditions may of course have fallen earlier than others. It is impossible to assign any precise date for most of them. The intent is only to present the general pre-Caucasian picture.

In the seventeenth century the horse began to come in; at first locally, and with little influence. By 1700 it had definitely affected some tribal cultures. By 1750 it had become in some measure universal,[58] and the historic plains-horse culture was getting into full swing. By 1800 it was flowing vigorously out of the plains and heavily overlaying both the Prairie and the Intermountain cultures, and even the margins of the Southwest. The peak may have been reached only as late as the early or middle nineteenth century.

As soon as the horse made the plains desirable, a drift into them began from all sides. Contributing factors along the eastern front, at least locally, were the pressure of white encroachment, of tribes equipped with firearms, the westward shrinkage of the bison. Thus tribes that had previously met only at long range, perhaps not at all, were thrown into close and often intimate contact: the Teton and Cheyenne with the Arapaho and Blackfoot, for instance. The Arikara moved northwestward until they found a stay with the likewise sedentary Mandan and Hidatsa. Roughly about these village tribes there revolved the greatest turmoil of new contacts, clashes, readaptations, and impartings. To these changes the villagers contributed, and they were not uninfluenced by them. As old settlers, they were not torn from their anchorage of maize fields, pottery, domed houses, palisades, matrilineate. But they became an increasingly smaller factor in the total situation as the new growths flourished around them. Farther south, the Pawnee, a larger unit, perhaps effected a better adaptation, except for earlier demoralization by white contacts. Still farther south, the prairie narrows, and the culture of the woodland peoples had been too much undermined by French and Spanish contacts and conflicts for them to be able to shape anything notably novel. About 1700 a large part of the Shoshone broke away from their Wyoming sagebrush, followed the front of the Rockies southward, and, as the Comanche, drove the eastern Apache back into the mountains or the Texas scrub, confirming them as marginal Southwesterners instead of the dominant southern Plainsmen which they might otherwise have become. In the far north, Cree and Ojibwa bands were evidently among the last tribes to try to enter upon a plains-prairie type of career.

Of rituals, the Sun dance evidently represents a relatively recent development in the plains proper, which flowed eastward into the prairies with diminished intensity, and crossed the Rockies late and to a still less degree. Whether the Sun dance is an agglomeration around an old Arapaho nucleus, or whether

[58] F. Haines, The Northward Spread of Horses among the Plains Indians, AA 40:429–437, 1938, gives the latest data, which roughly confirm my generalization.

6d. *Northern or Canadian Prairie subarea:* part or most of the Assiniboin, and ... and Cree recruits—Algonkin timber people and a Dakota offshoot driven by Dako... tility into Algonkin affiliations. Prairie adjacent to northern coniferous forest and ... parkland, draining into the Arctic instead of the Mississippi; eastern relations close... peoples who farmed little or not at all; late strong superficial influences from the N... Plains.

SUMMARY OF TRIBAL HISTORY IN THE PLAINS-PRAIRIES

The outlines of tribal history in the plains and prairies, before the first ... casian influences made themselves felt, say about three to five centuries ... may be tentatively reconstructed as follows.

On the west, a series of tribes lived in the foothills and broken country ... front of the Rockies, utilizing also the ranges behind and the plains be... them, according to season, occupation, and need. Their primary cultural affi... tions are likely to have been Intermountain. They consisted in the south large... of Athabascans. The Kiowa may have been among them, or northward. S... farther north, where the lower timber is pine instead of juniper or scrub, ... Algonkins representing two drifts, both ancient, but the Arapaho-Atsina ol... and probably more southerly than the Blackfoot. The Sarsi may not yet ... come out of the northern woods to join the Blackfoot. The Crow may alread... have left the Hidatsa to live at the foot of the western mountains; but this ... shift may not have taken place until somewhat later. In the sagebrush plain... of Wyoming, behind the Laramies and Big Horns, and perhaps in the moun... tains to the north, were Shoshone.

On the south, Caddoan groups extended up the Red and Canadian rivers ... far enough, probably, to abut, in the seasonally visited short-grass plains, on ... the Athabascans. South Texas groups like the Tonkawa were perhaps too pre... dominantly a woodland or scrub-timber people to participate with much im... portance in these contacts. Of the Caddoans, the Pawnee-Arikara branch had ... begun to drift northward, perhaps had already passed out of the woodland ... of Oklahoma-Arkansas-Missouri into the timber-streaked prairies of Nebraska ... but maintained successfully the essentials of their rather complex culture.

On the east there were mainly Siouan tribes. The Chiwere group—Iowa, ... Oto, Missouri—clung most rigorously to the woodland. The Dhegiha, if not ... already divided, split soon after, with the Quapaw and Omaha-Ponca as ex... tremes: the former hugging the forested Mississippi, facing southward, and ... reintegrating more closely with the Southeast-Lower Mississippi culture; the ... latter ascending the Missouri, trending westward into more open country, ... and beginning to diverge from their old woodland culture. The Mandan and ... Hidatsa were already in the open, perhaps less far north than later and still ... cultivating prairie rather than plains soil. Their specific tribal histories were ... diverse though roughly parallel and later joined and assimilated. The basis ... of their culture may have been southern—Pawnee-Caddo—in type, more than ... eastern—Central Siouan. They had perhaps been detached longest from the ... central body of the Siouan stock. North of the Chiwere were the Dakota: the ... Teton probably in timber-interspersed prairie, the other divisions mainly in ... the woods. The Assiniboin perhaps had not yet begun their quarrel with the ...

this people merely were the most active syncretists for a century or two harder to say. Age-graded societies appear to date back to the older strata of culture among the village tribes and were taken into the historic Plains culture by only a few groups that had long lived in or at the edge of the plains proper. The history of the ungraded society type of ritual organization is obscure, but the region of development apparently was the southern prairie.

The bison was exterminated by the Caucasian with Indian aid. Whether Indian alone, but equipped with horses and guns, could have lived indefinitely off the animal, is an open question. It is entirely conceivable that even then might have destroyed the species in a century or so. Once the balance turned against an animal, its decline, at first almost imperceptible, is known sometimes to increase with almost incredible rapidity; especially has this been observed of game too large to seek hiding. Before the horse, difficulties of transport, water, and shelter in the plains allowed the Indian merely to nibble at the existence of the bison, so that the perpetuation of the species might have gone on indefinitely. It might easily have been different, however, with a very similar species in a different habitat; say the foothills of the Rockies, which lack so far as purely native culture was concerned, the inhospitability of the open plains. A species adapted to such an environment might have met the fate of the historic buffalo of the plains almost as quickly in native times, once certain groups centered their subsistence on it. And such an event could as well have occurred a hundred as a thousand or ten thousand years before Columbus. That the Folsom bison belongs to an extinct species is, of itself, no reason for placing its human hunters into a past geological age. In its foothill range this animal might have been exterminated at a relatively late period by the very same populations whose descendants, with the help of horses, guns, and white men, terminated the plains bison. And with the animal gone, their culture would have had to end by altering or betaking itself elsewhere, thus perhaps appearing also to be more ancient than it really was.

7. WISCONSIN OR WILD-RICE AREA

West of Lake Michigan in Wisconsin, and extending northward to Lake Superior to include adjacent parts of Michigan and Minnesota, there lived at the beginning of the historic period an unusual number of tribes: the Siouan Winnebago and some of the Santee Dakota; and the Algonkin Menomini, Sauk, Fox, Kickapoo, Potawatomi and Mascouten,[59] and probably some of the Ojibwa. The Mascouten lost their identity, the Kickapoo and Potawatomi drifted or were driven out, the Sauk and Fox after a turbulent career moved into the central Siouan prairie; but the Menomini and Winnebago stayed and retained their numbers and old culture with unusual success, and the Ojibwa pressed increasingly into the northern part of the area.

The general vegetation maps fail to show the cause of this concentration of population. They give the area as part deciduous, part coniferous forest, with

[59] Some of these Algonkin tribes are said to have been originally between Lakes Michigan and Huron, but even if so, they were established on the Wisconsin side when the French reached them about the middle of the seventeenth century.

patches of prairie. The coniferous forest is more of the pine type characteristic of the upper Great Lakes than of the spruce-fir association that predominates in the northern transcontinental belt (map 4). Much of the region evidently was covered with a mixture of pine and of the trans-Ohio and Mississippi type of oak association. Livingston and Shreve (map 5) designate most of it as evergreen-deciduous transition forest. As prairie was also present, this was a favorable enough native habitat; but not in any way extraordinarily so in its prevalent plant cover. It was not decisively superior, for instance, in general features to Michigan and Indiana, which were much more thinly populated.

The cause of the population density, then, obviously, so far as it was environmental, lay in something which the general vegetation classifications do not represent; and this was wild rice, *Zizania*, whose utilization Jenks has discussed.[60] He estimates or quotes the Indian population of the wild-rice district, defined much as at the opening of this section, as 44,500[61] in 1764, that of Michigan, Illinois, Indiana, Ohio, and southern Wisconsin as 31,750. For 1778 the comparative figures are 32,000 and 14,150; for 1822, 20,485 and 24,158. *Zizania* has a wide distribution, and its importance in the region in question must be due to cultural patterning as well as unusual abundance; but it clearly was a subsistence influence of the first order. Jenks believes that the supply becomes quickly exhausted, and that systematic use of the grain therefore could have begun only a short time before the first entry of the whites. However, with rice as a staple plus a fairly favorable mixed general plant cover, the area clearly has been utilized as a favorable Indian habitat since at least the sixteenth or seventeenth century. (It may have been so before. The prehistoric mound district of Wisconsin and the historic wild-rice district overlap, though they lie partly south and north of each other. See map 15, p. 102 below.)

The heart of the area was the Menomini-Winnebago-Sauk-Fox region bordering on central Lake Michigan. This is a district more favorable to agriculture, on account of a longer growing season for maize (map 27), than any to the west, and of course to the north. Physiographically (map 7), this same region around Green Bay and Lake Winnebago is reckoned as part of a rather uniform area extending through southern Michigan and Ontario to central New York, the "Eastern Lake section" of the Central Lowland. Immediately west lies the section called Wisconsin Driftless—and therefore relatively lakeless and riceless. The east Wisconsin heart thus added to the rice of other parts of its area a topography similar to that of favorable eastern regions, plus farming possibilities superior to those of other districts in its latitude.

The cultural affiliations of the area to the Central and Southern areas have been mentioned.

8. OHIO VALLEY

This is the area of the drainage of the Ohio, plus Illinois and perhaps most of the southern peninsula of Michigan. In general, this stretch was as thinly populated at the opening of the historic period as the wild-rice district was densely settled. Parts of Ohio, Kentucky, and West Virginia are regarded as

[60] BAE–B 19, pt. 2, 1900.

[61] The Wild Rice area figures include some Dakota.

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having been uninhabited. The Illinois held Illinois; the Miami group, Indiana, the western Shawnee, parts of Tennessee and Kentucky. All three were Algonkin. The first two suffered heavily early in the historic area. The western Shawnee moved northeastward across the Ohio. Delaware, eastern Shawnee, Huron, Kickapoo, Potawatomi drifted into the same general region of Ohio, Indiana, and Michigan in the eighteenth century. In other words, this previously almost empty tract became a temporary refuge for tribes from all surrounding regions (except due west) who were pressed by white or Indian enemies. That they made a stand here for nearly a century, and some of them held or increased their numbers, proves the habitat a potentially favorable one, and indicates that it was in a temporary depopulation when discovered. The legendary movements of the "Central" Siouans west across the Mississippi, and of the Delaware east across the Alleghanies, with the split of the Shawnee into two separated bodies, fall in with the concept of such a depopulation. So does the prehistoric Mound Builder culture, which definitely centered in Ohio drainage. In short, three stages are discernible in the history of the area: 1, relatively heavy numbers and an advanced culture of Southeastern affiliations, in Mound Builder time; 2, a scant population with an indecisive culture; 3, an inflow of tribes disturbed, directly or indirectly, by white contacts, and proceeding, temporarily, to evolve a partly new, assimilated, hybrid Caucasian culture.

This historic picture explains the chief causes of the apparently greater cultural resemblance of the Southern Prairie to the Wild Rice than to the nearer Illinois-Ohio Valley area. The latter, at its discovery, was in a slump; later it became a refuge of tribes from elsewhere. Both Prairie areas and the Wild Rice area remained relatively unaffected by these fluctuations and retained their common elements, at any rate until affected by the horse and firearms.

Another factor probably is the sources of information. We have good modern ethnological studies of the Omaha, Winnebago, Menomini; not one of any earlier or later Ohio Valley tribe. With comparable data, this area, especially in its western part, might seem less aloof.

The Illinois would be particularly important to know something about in this connection, because their territory, and part of that of the Miami group, lay chiefly in prairie or parkland. Harshberger and Shelford designate most of Illinois as oak savanna, Livingston and Shreve as deciduous forest-grassland transition, Shantz and Zon as prairie with broad oak tongues following the streams (maps 2–5). There may actually have existed the closer cultural relationship of Illinois with the Prairie areas which the ecological similarity would suggest. An exact scrutiny, from the modern comparative angle, of all available data on the Illinois might conceivably transpose them from the Ohio to the Prairie culture.

It seems desirable, accordingly, for the early historic period, to divide this area into:

a. *Ohio Valley* proper: Western Shawnee, Miami, perhaps Potawatomi; later, other tribes.
b. *Illinois:* the Illinois.

The prehistory of the Ohio Valley must have been one of the most interesting as well as important in North America. Unfortunately, most of the archaeological work in this area has been done with rather little interest in broader culture-history problems. Consequently the rich data have been organized with reference to local interest, if at all, and when wider interpretations have been attempted they have been speculatively unsubstantial. As rich a culture as that of the Mound Builders must have embraced traceable variants of both district and period. The latter we cannot yet specify with certainty. Presumably the basis of the culture type as a whole was related to that of the Southeast; but on this there grew fairly notable local superstructures, which temporarily equaled or surpassed the Southeastern development. When the population, ethnic organization, and luxury culture growths decayed in the Ohio Valley, the Southeast reëmerged as dominant—perhaps was strengthened by the reflux. Some of the areas adjacent on other sides—Prairies, Wild Rice, Lower Great Lakes—also absorbed and retained some portions of Mound Builder culture, to their own enhancement. In the area itself, on the other hand, the destructive tendencies, once in the ascendant, seem to have run their full course, until the heart of the old Mound Builder region was a low-pressure spot, culturally and populationally. The legendary southwestward movement of the Dhegiha-Chiwere Siouans may have been part of one of the last phases of this period of evacuation and decay. It is tempting to think of the Mandan, Hidatsa, and Winnebago as similar emigrants; but it would be speculative to follow this idea out until a clearer picture of Mound Builder culture is available. At any rate, while Siouan tribes may have flowed out, by the time of discovery Algonkin ones had flowed in (or possibly remained), but in a thin layer, and, as an almost inevitable corollary, with a relatively uncharacterized, low-level culture.

There is of course no implication in the foregoing of anything mysterious or abnormally advanced in Mound Builder culture. Its type and level, as already said, were in general those of the early historic Southeast. But the size of some of the earthworks, their configuration, the quantities of copper and pearls owned in certain localities, the quality of some of the decorative art, all argue that the culture, whatever its origin or level, at one time enjoyed a transient florescence of rather high degree.

These matters will be reverted to in a subsequent section on Eastern archaeology.

9. LOWER GREAT LAKES

The Lower Great Lakes area coincides with the main or northern Iroquoian block of our linguistic maps. It takes in all the tribes of this territory: Iroquois, Huron, Tionontati, Neutral, Erie, perhaps Conestoga-Susquehanna. Except the last, these are all in middle St. Lawrence drainage, whose watershed defines the area. The territory is that of the St. Lawrence River itself except at its mouth—from about Montreal up, in the period of settlement; Lakes Ontario, Erie, and St. Clair; and the southeastern shores of Huron.

The area is a vegetational as well as physiographic unit: deciduous forest,

in part with coniferous admixture, and shading in the north into prev... evergreen. The several maps differ somewhat in their vegetation subdi... and in the allocation of these, but agree in regard to the general facts. ... noteworthy that the whole of what Malte calls the "Carolinean" provinc... Canada falls within this area. Even the most northerly tracts of the ... Great Lakes area lie south of the great northern transcontinental conifer... belt. Their evergreens are hemlock and pine rather than the fir and sp... of the north.

The area is the heart of Otis Mason's St. Lawrence-and-Lakes ethnic ... vironment, and one of the four subareas of Wissler's Eastern Woodland ...

Besides speech, culture is fairly differentiated. It is marked by emphas... institutional rather than religious or technological developments; consis... matrilineate, strongly functioning sibs, a tendency to coördinate and organ... these as well as tribes into functioning quasi-political bodies. The Iroqu... league was the most successful in historic times, perhaps largely owing ... accidents of Caucasian relations. The purely native basis of this league ... present in the other Iroquoian confederacies, and lagged little if any behind ... the degree of development of the Southeastern confederacies. In material cul... ture there were Iroquoian specializations, none of a high order, in potter... pipes, house types, and so forth; possibly a somewhat greater emphasis on ... farming than elsewhere in the same latitudes, on account of a somewhat longe... and surer growing season (map 27).

Resemblances between the Iroquoian and Wild Rice areas seem not to be ... specific so much as due to elements and trends common to the whole region ... east of the Mississippi.

The position of the Conestoga is doubtful. Their habitat was in Middle ... Atlantic Coast drainage. They broke up so early that their culture is only ... sketchily known.

10–12. ATLANTIC COAST AREAS

As far north as the Muskogian tribes extended, a little beyond the Savannah ... River, the Atlantic coast can be assigned to the Florida and Southeast areas. ... Beyond, a new province is entered, as indicated not only by a change of prev... alent speech to Siouan, but also by the lower degree of cohesiveness and size ... of the ethnic units and consequently less successful resistance to Caucasian ... encroachment; although it must be admitted that the English attitude toward ... natives was also less tolerant than that of the French and Spaniards. Probably ... for the same reason, they were far worse ethnologists, with the result that, the ... native life having long since been crushed, we know comparatively little of the ... Atlantic Seaboard cultures.

The whole region from South Carolina to the mouth of the St. Lawrence is ... fairly uniform as an environment except in temperature. The precipitation is ... much the same. There is neither high nor bold relief. The slope from the Ap... palachian ranges to the shore is of about the same width, and the length and ... size of the parallel rivers therefore approximately equal. The coast, being low ... and tempered by the ocean, has generally a more southerly type of plant cover ...

... the piedmont, and this often differs in the same way from the Appa... lachian ranges. The vegetational belts thus stretch northeastward, and die ... away in a tapering strip as they meet the north-northeastward-trending coast. ... This is shown clearly on the Shantz-Zon map (no. 4), which carries finer dis... tinctions of the plant cover than the others. The southeastern pine extends ... along the coast as far as Cape Hatteras; the piedmont pine-and-oak forest, to ... New Jersey; the oak-chestnut hardwood forest of both sides of the Appalach... ians, to Rhode Island; the birch-beech-maple-hemlock association, to southern ... Maine; then comes the northern spruce-fir—although with deciduous admix... ture, since from the Canadian point of view Malte (map 5) reckons everything ... south of the Gulf of St. Lawrence as "hardwood" in contrast with the great ... Subarctic evergreen forest beyond. It will be seen that there is variation from ... prevailing coniferous to deciduous and back to prevailing coniferous forest, ... without any sharp breaks, and with probably a preponderance of deciduous ... character—though this deciduous character is not so marked as in the region ... between the Appalachians and the foot of the Rockies. What is constant is the ... forest cover. There is some marsh along the shores; but no natural true grass... land, even in patches of any considerable size.

As might be expected, a setting as uniform as this produced no sharply differentiated cultures. The chief differences are in the intensity and success of maize culture, as this depends on length of frostless summer and consequently on latitude and nearness to the sea; the resultant density of population; and relative distance from more advanced cultural centers, especially the Southeast. It will be convenient to distinguish three cultural provinces. One extends north to the Potomac; another to New Hampshire or southern Maine; the third lies beyond.

10. *North Atlantic Slope.*—This is an Algonkin area, containing the Abnaki and Micmac, perhaps also the Pennacook, and about coterminous with Maine, Nova Scotia, and New Brunswick. The culture was simpler than in the next area, in dependence on its nonfarming subsistence basis. Maize was grown, but only to a subsidiary extent, being at the limits of its cultivability.

11. *Middle Atlantic Slope.*—The Middle Atlantic Slope tribes were also all Algonkin. They were the southern and central New England tribes from the Pennacook south; the Wappinger and Mahican; the Delaware; and perhaps the Conoy and Nanticoke. Of these, the Delaware evince some traditional, linguistic, and cultural indications of a western, trans-Appalachian origin. The Conestoga-Susquehanna may have belonged with this area or in the Iroquoian Lower Great Lakes area.

The inclusion of the Pennacook is doubtful. The Handbook of American Indians inclines to group them with the southern New England Indians. Michelson's Algonkin linguistic map puts them with the Abnaki. Their historic affiliations since warfare with the English settlers in the late seventeenth century have been with the Abnaki. These affiliations may disguise an earlier leaning toward the south. The Conoy and Nanticoke may belong with the next area.

The culture of the Middle area was built around farming; but it was ... one of intensive trends. If Mooney's computations are right, the popula... was rather denser than in the areas to the south and inland, and in the coas... stretch between New York and Boston it was heavier than anywhere eas... the Rockies.

12. *South Atlantic Slope.*—This area includes the eastern Siouan tribes ... few Iroquoians, notably the Tuscarora and Nottoway; the little known No... Carolina Algonkin; and the Algonkin Powhatan. Speck has set the latter ... as constituting a distinct cultural subprovince.[62] The vegetation of their ar... is largely of piedmont type, although they lived in a tidewater district. T... country of the Carolina Algonkin is one of swamp forest, marsh, estuar... and wide, shallow sounds or bays. It is likely that they had modified the gener... culture of the region so as to make it accord with their special subsistenc... requirements. The rest of the area, that of the Siouan and Iroquoian tribes ... probably divisible into a Lowland and a Piedmont subarea, fairly coinciden... with the southeastern pine and oak-pine ranges of Shantz and Zon. Too litt... is known of the culture to press the validity of these subareas, though they ma... be provisionally listed as follows:

12a. Piedmont
12b. Lowland
12c. Carolina Sound
12d. Virginia Tidewater

On the whole, there is little to indicate strong specific influencing by the ... Southeast, although at the border culture probably shaded over continuously ... Tribes as far south as the Catawba were in relations, though of hostility, with ... the Iroquois rather than with the Creeks. The Tutelo and Tuscarora sought ... refuge with the Iroquois. These facts indicate a northward outlook of the na... tive culture—a sense of community along the Atlantic slope rather than with ... the Southeastern area. So, too, there is little trace of Mound Builder resem... blances and influences; whereas as soon as Georgia is entered, these appear.[63]

Speck[64] classes the Powhatan culture definitely as Southeastern, and cites ... an impressive list of specific cultural resemblances. However, he analyzes the ... situation in terms of a contrast between a Muskogian-Siouan Southeast and ... an "older northern Algonkian" culture. He then has the Maryland-Virginia ... North Carolina tidewater invaded by Algonkins from the north, who assimi... late the Southeastern culture and pass some of it on to their northerly kinsmen ... as far away as New England. This is a hypothesis involving a combination of ... ethnic and cultural considerations. One would expect Virginia culture to be ... more similar than Massachusetts or Maine culture to that of Georgia. But it ... seems an undesirable simplification of the situation to explain it wholly in ... terms of two original, contrasting cultures of Creek and Abnaki type. There ... seems no specific reason for believing that such a cultural discontinuity ex... isted more strongly in the prehistoric past than in early historic times.

[62] AA 26:184–200, 1924. He includes the Conoy and Nanticoke of Maryland with the Pow... hatan culturally. I have hesitantly put them with the Delaware in the Middle Atlantic Slope.

[63] The same. See also maps 15, 16, pp. 102 and 104 below.

[64] The same. Swanton, as cited in the previous section on the Southeast, holds the same view.

13. APPALACHIAN SUMMIT

The Cherokee are difficult to place. Their culture had hybridized through in... direct Caucasian absorptions before their territory was seriously penetrated. It seems to have been a rather anomalous culture. Specific Southeastern traits are not strikingly to the fore. The impression that the Cherokee are South... eastern appears to be partly due to the similarity of their and the Creek his... toric fortunes. Both groups prospered in comparative peace with the British until about Revolutionary times, fought the Americans stubbornly, and under... went analogous social and organizational transformations and removals to Indian territory. Nor do the Cherokee seem to show specially close relations with the Ohio Valley people nearest them, the Shawnee; with the Siouan tribes of the Atlantic slope; nor with their Iroquois kinsmen in the north.[65] Their situation evidently accounts for this aloofness. They occupied the southern and highest part of the Appalachian system, where this ends rather abruptly and falls into the piedmont and plain of the Gulf slope (map 17, p. 121). They are, with the possible exception of two or three obscure eastern Siouan tribe... lets, the only native people in the eastern United States that lived in a true mountain habitat. Their settlements, of course, were in the valleys among and about the mountains. But the way in which these settlements and the claimed territories clustered around the massif shows that this was the dominant ele... ment in their relation to the landscape. Among other eastern tribes, mountains were incidents, borders, hunting grounds, or waste areas in their territory; among the Cherokee, the mountains were the structural backbone of their habitat. The higher parts of their land have a vegetation cover characteristic of the latitude of central New York, with enclosed elevated islands of the type prevalent in Maine, according to the Shantz-Zon map (no. 4). It would be strange if the inhabitants of such a region resembled very closely those of the warm Gulf peneplain.

While it is difficult to allot the Cherokee primarily to one or another of the three areas surrounding them—Gulf Slope, Atlantic Slope, or Ohio Valley—this very difficulty brings out a fact that is probably of historical significance: the importance of the Appalachian system as a secondary line of culture cleavage.

NORTHERN AREAS

The whole north of the continent except its shores and a belt of tundra is a great coniferous forest occupied by Algonkin and Athabascan peoples. These were perforce nonagricultural, the climate being subarctic and wholly un... adapted to maize. Subsistence was therefore by hunting and fishing. As early as the seventeenth century the fur trade began to bring a readaptation, which spread gradually westward. It became more and more profitable for bands to become dependent on trading posts. They gave furs and received traps, fire... arms, tools, trinkets, and provisions. Their meager specific culture was there... fore already affected when the first modern ethnological studies were made

[65] Cf. Swanton BAE–R 42:712, 1928; though he classifies the Cherokee as culturally mar... ginal to the Creek.

among them. On the other hand, the demand for furs encouraged them to maintain their hunting habitus. In the actual food consumption, flour and pork came to constitute a growing proportion; nevertheless, the long-run effect of Caucasian contacts was to entrench these peoples more firmly in the occupation as hunters. The interior of Alaska was the last region to be reached by these influences: in some of its parts the miners' irruption at the close of the nineteenth century was the principal factor that determined the new order. But in the main the transmutation proceeded rather uniformly over the whole region.

Underlying this recent uniformity was a considerable one of native culture and, below that, of ecology. The northern forest is substantially one from Alaska to Newfoundland. Mason recognized the area as a unit definable in terms of this transcontinental coniferous belt. Wissler did the same when he set up the caribou food area; though he then proceeded to divide this between the Eskimo, Mackenzie (-Yukon), and Eastern Woodland culture areas. The scheme puts the Naskapi and Cree with the Iroquois and Winnebago, and Wissler has to set them off again in a northern subarea of the Eastern Woodland admittedly very similar in material culture to the Mackenzie area. The awkwardness of this classification is obviated and the true relations are probably best brought out if we follow Mason in basing culture on natural environment and subsistence.

A subdivision for convenience is provided by the line between Yukon and Mackenzie drainage and Hudson Bay and Atlantic drainage. This line approximately coincides with the somewhat fluctuating Athabascan-Algonkin boundary. Another division is made by the Height of Land which separates the Hudson Bay from the Great Lakes drainage.

14. NORTHERN GREAT LAKES

This is the area of the Ojibwa, Ottawa, and Algonkin proper as distinct from the Cree and Naskapi. It lies generally south of the Height of Land and drains into the Great Lakes and upper St. Lawrence. The Montagnais north of the lower St. Lawrence and Gulf should perhaps be included.

This area knew some agriculture, though this was nowhere primary in the subsistence. It was also exposed to direct contacts with the agricultural areas on the south. These circumstances set it off from the more northerly Algonkin area. There is an ecological correspondence which is shown on some but not all of the maps. Shelford, for instance (map 3), includes the present area in his Northern Coniferous Forest. Harshberger (map 2), however, sets off a St. Lawrence-Great Lakes area which extends north to the Height of Land. Malte (map 5) distinguishes a (Canadian) Hardwood Forest province, extending between Lake of the Woods and Nova Scotia, from the Subarctic (Coniferous) province. The other Canadian source (map 4) recognizes first a Mixed Forest and then an Eastern Coniferous Forest astride of the Height of Land, before the true, transcontinental Subarctic Forest is reached. Wissler's map[66] of caribou distribution points the same way: in the main, the present area is outside

[66] American Indian, p. 4, 1922; after Grant.

...range of the animal. According to Malte, most of Montagnais territory would fall into the northern vegetation; which agrees with the dialect-group distribution, though cutting across the drainage.

There has been a southwestward drift in and near the area. The Iroquoian Huron abandoned the St. Lawrence between French discovery and settlement. Montagnais, Algonkin, and Abnaki flowed in. Ottawa territory now is west of the Ottawa River. The Potawatomi, traditionally of one origin with the Ottawa and Ojibwa, have moved about Lake Michigan in the historic period. The Ojibwa are always represented as having gained ground from the Dakota. If the several statements in the Handbook of American Indians may be accepted literally, the prehistoric Ojibwa were wholly north of Lake Superior and Lake of the Woods, and their entry into the Wild Rice and Northeastern Prairie areas is recent. There seems also to have been a pushing of western Ojibwa northward into Cree territory rather late in the historic period, if the earlier references to the extent of Ojibwa territory can be taken at face value.

J. M. Cooper[67] gives the Algonkin groups between the St. Lawrence and Hudson Bay a distribution noticeably different from that of Michelson, Swanton, Skinner, the Handbook, and my map 1. He carries the Montagnais northwestward across the Height of Land to James Bay, so as to hold the whole of Rupert River and the lower parts of Nottoway, Eastmain, and Big rivers. They adjoin the Eskimo, and thus entirely cut off the Naskapi from the Cree. On the other hand, the Tête de Boule form a definite Cree island within Algonkin and Montagnais territory, more than two hundred miles east of any other Cree, and in St. Lawrence watershed. The Cree proper, Cooper has begin only at Moose River and stretch westward in a much narrower band than shown in map 1. For instance, on the Albany he puts them only below the Kenogami. Beyond longitude 90° or 92°, their southern limit is not shown. The territory between their southern boundary and the Height of Land he assigns to the Ojibwa, who extend eastward to the middle Nottoway River. The Abitibi he makes Ojibwa, not Cree. Cooper's line between Ojibwa and Cree coincides rather well with that in map 5 between the Eastern Coniferous and Subarctic forests.

15. EASTERN SUBARCTIC

This includes the various Cree divisions, the Naskapi, the Beothuk of Newfoundland, possibly the Montagnais. The Plains Cree represent a recent spillover from the forest into parkland prairie. The boundary of Cree against Athabascan has been somewhat arbitrarily set between the Nelson and Churchill rivers. This boundary the Cree have overflowed; and, wherever it originally lay, it has fluctuated in the historic period. Some of the Ojibwa have also worked northwestward. Skinner, for instance, puts the Northern Saulteau Ojibwa of today on the head of the Severn River.[68]

It is of interest to compare Michelson's classification of the Algonkin languages[69] with the cultural areas that have been reviewed.

The inference is that whereas tribes occasionally moved into an entirely new habitat, dialect groups tended closely to conform to the cultural-ecological

[67] Northern Algonkian Scrying and Scapulimancy, P. W. Schmidt Festschrift, 205–217, 1928; corroborated and extended by personal communication.

[68] AMNH–AP 9:10, 1911.

[69] BAE–R 28, 1912. The classification used is that given in the map, in which Swanton participated. The text classifies somewhat differently, with IV of the subjoined table split into a Central and an Eastern subtype. The Central subtype is made to consist of A1–2, 4–6, B, C, and D; the eastern, of A3.

groupings. Subsistence being the same, habitats inclined to remain uniform; this made for close associations, which in turn held speech together.

Speck has recently made a valuable addition to our knowledge of Montagnais and Naskapi band distribution and Labrador Eskimo territory, with maps for two to three hundred years ago and the last century.[70] This study centers

TABLE 4

ALGONKIN DIALECT GROUPS AND CULTURE AREAS

Dialect groups	Culture areas
I. Blackfoot (markedly distinct)	Northern Plains (long resident)
II. Arapaho, Atsina (markedly distinct)	Northern Plains (long resident)
III. Cheyenne, Sutaio (more similar to IV)	Northern Plains (newcomers)
IV. Eastern-Central Algonkin	
A. Cree type	
1. Cree, Montagnais*	Eastern Subarctic
2. Naskapi	
3. Micmac, Abnaki, Pennacook	North Atlantic Slope
4. Menomini	Wild Rice
5. Sauk, Fox, Kickapoo	Ohio Valley
6. Shawnee	Ohio Valley
B. Ojibwa type	
Ojibwa, Ottawa, Algonkin	Northern Great Lakes
Potawatomi*	Ohio Valley
Illinois, Miami	Ohio Valley
C. Massachuset type	
Southeast New England, Long Island	Middle Atlantic Slope
D. (Delaware type), position uncertain	
Mahican, Wappinger, Pequot, Delaware	Middle Atlantic Slope
V. Uncertain	
Nanticoke,* Conoy*	Middle (?) Atlantic Slope
Powhatan, North Carolina Algonkin	South Atlantic Slope

* Indicates that inclusion in the cultural area indicated by me is not certain, but they are included by Michelson in the dialect groups shown.

farther north and east than Cooper's account which has just been referred to, but on the whole agrees fairly well with it. Speck puts Montagnais and Naskapi into one group, as opposed to Cree, thus differing from Michelson's classification. The Eskimo have apparently receded, whereas Montagnais-Naskapi have advanced eastward and northward for several centuries.[71]

16. WESTERN SUBARCTIC

This is the western half of the great northern coniferous forest. The limit toward the tundra is drawn somewhat variously; in many parts the forest becomes low or sparse, and of course disappears in the higher mountains. In general, however, the tundra is assignable to the Eskimo, even where it extends

[70] Montagnais-Naskapi Bands and Early Eskimo Distribution in the Labrador Peninsula, AA 33:557–600, 1931.

[71] Speck has gone farther in Inland Eskimo Bands of Labrador, in Anthr. Essays, UC, 313–330, 1936. Of particular interest is a list of traits shared by Montagnais-Naskapi and Eskimo.

well inland. The Athabascan tribes whose territories consist mainly or partly of tundra appear to be the Hare, Yellowknife, and Caribou-eater. These, or at least the first of them, seem to constitute a cultural subarea. There are areas of tundralike formation farther west, as between the Mackenzie and upper Yukon drainages, and again in Alaska; but these, being due to altitude, may be regarded as mountain hinterlands of tribal territories otherwise more or less forested.

Toward the plateau and coast some border subareas have apparently to be set off. The Carrier in upper Fraser and the Babine in upper Skeena drainage have already been mentioned as of doubtful affiliation between the Fraser and the present region. The Tahltan and Taku-tine, back of the Tlingit, have been influenced by this people and appear in turn to have influenced especially the northern mainland part of the Tlingit. But they may tentatively be regarded as constituting an Athabascan or Subarctic subarea rather than a northernmost Intermountain one. The Tahltan are in upper coast drainage—on the Stikine; the Taku-tine partly on upper Yukon waters. Both are shut off from the farther interior by the Rockies. They should therefore show some differentiation from the other Athabascans. But as the primary ecological boundary admittedly comes at the Coast Range, they will probably have to be reckoned as in the main belonging culturally with the interior tribes. It may be added that most of the available plant-cover classifications (maps 2–5) agree roughly in assigning a Rocky Mountain type of vegetation to most of northern interior British Columbia. That is to say, the forest is Western Coniferous, not Northern.[72] The ethnic habitats involved in this plant cover are Carrier, Babine, Tahltan, and Sekani, in part or whole.

The tentative cultural classification is:

16a. Western Subarctic, main area.
16b. Interior Tundra (Hare, Yellowknife, Caribou-eater).
16c. Upper Fraser (Carrier, Babine).
16d. Northern Plateau Apex (Tahltan, Taku-tine).

Addendum on Western Subarctic

Osgood has recently given a classification of all northern Athabascans[73] which is probably much better founded than my compilation as expressed in map 1. Besides the Sarsi, Nicola, Chilcotin, and Tsetsaut in the Plains, Intermountain, and Northwest Coast areas, he recognizes twenty-one main tribes or nations in my Western Subarctic area, grouped into Arctic Drainage and Pacific Drainage major divisions on the basis of culture.[74] The areas on his map often differ markedly from those of mine. New tribes appear, while some of those shown by me reduce to subtribes or bands. Though Osgood's essay is tentative, and will no doubt be modified in detail, it represents the first real attempt to organize ethnic knowledge on this vast area.

[72] The Dominion map (4) divides the Tahltan and Taku-tine territory between Northwestern Coniferous and Subarctic forest, the line beginning at about 59° on the Alaska boundary and extending northwestward.

[73] YU–PA no. 7, 1936.

[74] Jenness, Nat. Mus. Can. Bull. no. 65, 1932, classifies culturally into a Mackenzie-Yukon and a Cordilleran area, with the Kutchin somewhat in doubt.

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Arctic Drainage division

Chipewyan. Includes my Caribou-eaters
Yellowknife
Dogrib: 4 groups
Bear Lake: 5 groups on Bear Lake
Hare, distinct from last, northwest of the lake, to west of the Mackenzie River
Mountain, 3 groups, west of Bear Lake, both sides of the Mackenzie
Slave, 4 groups, incl. Etchao-tine, on the Slave and Mackenzie rivers
Kaska, a large area on the Liard, west of the last
Sekani, upper Peace River, south of the last; 4 groups
Beaver, lower Peace River, east of the last, south of the Slave
(Sarsi, Athabasca River, south of the Beaver; in Plains culture)

Pacific Drainage division

Carrier, including Babine
Tahltan, including Taku-tine. Stikine and upper Taku rivers
Tutchone, a large area from 140° to the continental watershed, and including most of the Taku-, Abbato-, and Etchao-tine territories of map 1, on the upper Yukon affluents
Nabesna, on the upper Tanana
Han, on the Yukon, 64°–66° north latitude, comprise my Hun, but not Kutchin
Kutchin, from 130° to 150°, or from east of the lower Mackenzie to west of the middle Yukon. Elsewhere[75] Osgood gives the true Kutchin tribes somewhat differently from Ogilvie, whom I followed in map 1: Nakotcho or Kwitcha, Tutlit, Takkuth, Vunta, Tranjik, Kutcha, Tennuth, Natsit. All other groups are denied as Kutchin, though they may have been so called.
Tanana, on the lower Tanana and a stretch of the Yukon, southwest of Kutchin
Koyukon, on the Koyukuk and lower Yukon. Include Yuna-khotana of map 1
Ingalik, Eskimo name, lowest Yukon and Kuskokwim: Kayu-khotana and Kalchana, also called Tena
Tanaina, distinct from Tanana: the Cook Inlet Athabascans, my Khnaia-khotana
Ahtena, Copper River
(Tsetsaut, head of Portland Canal: Northwest Coast)
(Chilcotin and Nicola, interior of southern British Columbia)

An included tentative linguistic classification by Sapir puts eighteen of the languages into nine North Athabascan groups or divisions, seven being left unclassified for paucity of data:

1. Chipewyan, Yellowknife, Slave
2. Dogrib, Bear Lake, Hare
3. Kaska and Tahltan, on both sides of the continental watershed
4. Sekani, Beaver, Sarsi
5. Carrier and Chilcotin
6. Kutchin, the most divergent speech of all
7. Tanaina and Ingalik
8. Ahtena, perhaps distinct
9. Tsetsaut, probably most divergent after Kutchin

Most of these divisions differ from one another as much as they differ from Navaho-Apache, it is stated. The New Mexico-Arizona Athabascans, and the Oregon-California ones, each constitute a single well-marked speech unit; to which each of the eight or nine or more northern ones is roughly equivalent in distinctiveness.

[75] AA 36:168–179, 1934.

These facts about speech suggest strongly that the North Athabascans have occupied their territory long enough to diverge heavily from one another. The separateness of Tsetsaut is not surprising: they were a small group among aliens on actual salt water. The Kutchin, however, are surrounded by other Athabascans, except on the north, where they adjoin the Eskimo. Either contact with these latter set up disturbances leading to strong specialization, or the Kutchin must presumably once have lived in less contact with their fellow Athabascans or in greater exposure to some alien people.

Relations of Eastern and Northern Areas

It is an open question whether the Northern areas should be reckoned as part of the general Eastern tract or coördinate with it. They lie pretty solidly beyond the practicable limits of maize agriculture. This environmental condition has limited the population, stunted the culture, and kept it from making absorptions which otherwise would probably have taken place. It is in fact difficult to name traits specifically characteristic of the eastern areas proper which are also characteristically northern and limited to the two. Moreover, the door was ajar in the north to culture traits tending to seep in from subarctic Siberia: toboggan, snowshoe, birch-bark vessels, conical tent houses, cut and fitted clothing, scapulimancy (if not due to French Colonial import). These traits have generally worked across the continent throughout the subarctic or Hudsonian belt, but have not penetrated seriously the areas south of it, even where the environment permitted.

On the other hand, the Northern areas do not show even a tendency toward a cultural center or culmination; and the transition between them and the Eastern areas is gradual, except for changes resulting from the impracticability of agriculture. Thus there is nothing against considering the Northern cultures as primarily a meager and undifferentiated form of the Eastern cultures which center in the Southeast. On the whole, this seems best to express the relation.

Eastern Archaeological Areas

On the side of pure archaeology there exist a number of distributional classifications which bear on the differentiation made in the foregoing pages between the Southeastern, Mississippi Valley, and Lower Great Lakes cultures, on the one hand, and those of the Atlantic slope, on the other.

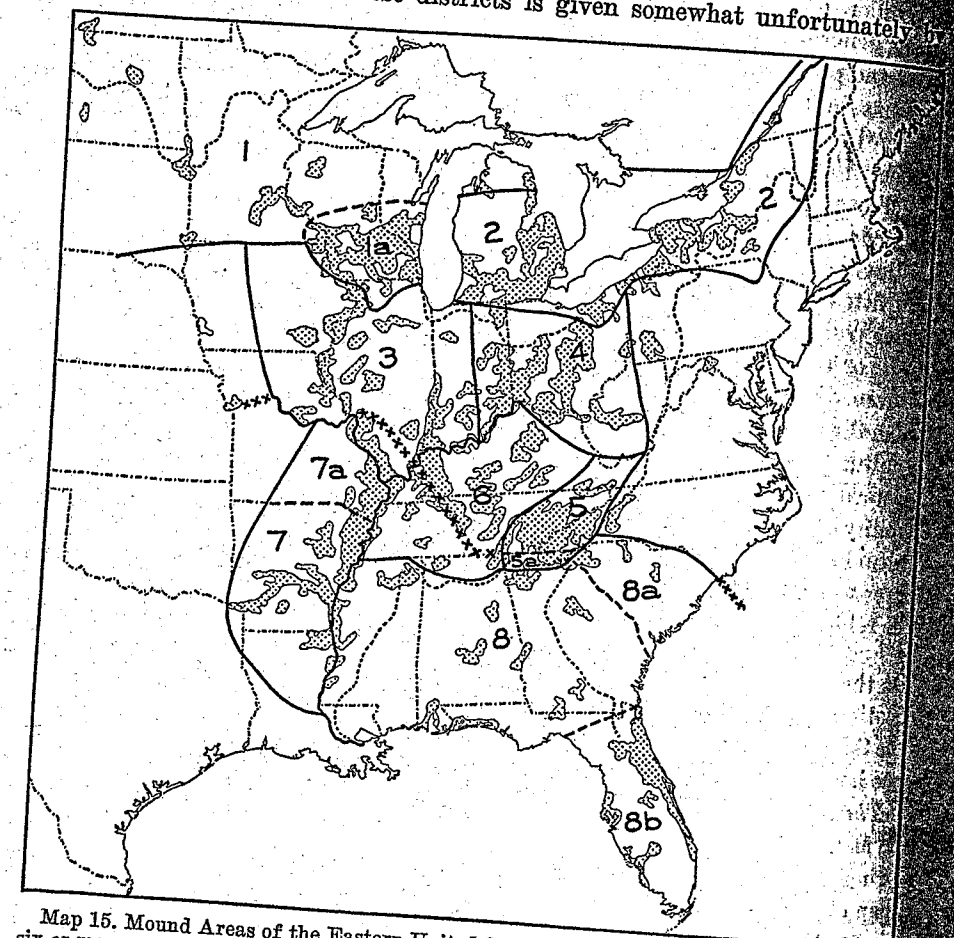
Thomas on mounds.—The first of these classifications is Cyrus Thomas' work on mounds of the eastern United States.[76] In map 15 I have tried to embody his principal regional findings. Wissler has previously condensed Thomas' main map of mound occurrence.[77] My reduction is somewhat less summary, in that it attempts to show with reasonable accuracy every area containing six or more mounds or mound groups separated from one another by not more than fifteen to twenty miles; more scattering occurrences are omitted.[78] I have also added

[76] BAE–R 12, 1894.
[77] The Relation of Nature to Man, 12, fig. 5, 1926.
[78] This map could have been added to, notably from the publications of Moore, but an exhaustive bringing of it up to date would be an exacting task, without, probably, much changing the general inferences to be derived from Thomas' work.

the watersheds between Atlantic, Mississippi, and Great Lakes drainage. Further, my map embodies the "districts" discussed by Thomas in his text, namely:

1, Dakotan (or Northwest) with 1a (Wisconsin), subdistrict of Effigy Mounds; 2, Huron-Iroquois, from Lake Michigan to Quebec; 3, Illinois, including adjacent parts of Indiana, Iowa, Missouri; 4, Ohio, including eastern Indiana, northeastern Kentucky, southwestern West Virginia; 5, Appalachian, about coterminous with historic Cherokee territory, North Georgia, transitional between the last, the Gulf area, and the next; 6, Tennessee Central district, including most of Kentucky; 7, Arkansas, down to the Red River, with Southeast Missouri, as a subdistrict; 8, Gulf, from the lower Mississippi east, with 8a, South Carolina, and 8b, Peninsular Florida, forming probable subdistricts.

The delimitation of these districts is given somewhat unfortunately by



Map 15. Mound Areas of the Eastern United States; simplified from Thomas. Groups of six or more mounds or mound clusters within not exceeding fifteen to twenty miles of each other shown in stipple; smaller groups and isolated mounds omitted. Mound areas and subareas: 1, Northwestern (Dakotan); 1a, Effigies or Wisconsin; 2, Huron-Iroquois; 3, Illinois; 4, Ohio; 5, (South) Appalachian; 5a, North Georgia, transitional; 6, Tennessee or Central; 7, Arkansas; 7a, Southeastern Missouri; 8, Gulf; 8a, South Carolina; 8b, Peninsular Florida. Division between Northern and Southern major "sections" shown by xxxx. Atlantic, Gulf, Mississippi, Great Lakes, and Hudson Bay Drainage watersheds shown by dotted line.

Thomas in terms mostly of states or counties, but in general is reasonably definite. His classification is based primarily on the shape, structure, and function of the mounds themselves, but takes cognizance also of interments, pottery, etc. A basic classification by Thomas into a Northern and a Southern "section" cuts without explanation across some of the foregoing districts, southwestern Illinois and western Tennessee being thereby separated by him from the remainder of the Central district to go with the Arkansas and Gulf districts. This somewhat discordant major classification has been entered on map 15 by a line of crosses.

The following conclusions result from Thomas' work:

1. The Appalachian watershed formed an important line of cultural cleavage. To the east, mounds were of shell or other refuse. A few spillings of mound groups eastward over the physiographic boundary fundamentally confirm the division, because in the main these exceptions lie close to the boundary.

2. The Great Lakes and Gulf drainage went with the Mississippi Valley.

3. The lower Great Lakes were set off from the Ohio Valley as a separate district or area.

4. West of southern Lake Michigan was an area of concentrated and specialized mound culture. This was continuous across Wisconsin, without regard to the Lakes-Mississippi watershed, in contrast to the region east of Lake Michigan, where the watershed delimited cultural provinces.

5. The uppermost Mississippi mound culture extended in some degree to the Red River of the North and perhaps to the middle Missouri.

6. The western frontier of the intensive mound culture was approximately the edge of the forest, though in the north the mounds, and in the south the woodland, extended somewhat farther west. The prairie areas of Illinois and Indiana (map 4) were comparatively moundless.

7. The heart of the mound area was the Ohio drainage, together with the immediate valley of the lower middle Mississippi.

8. The characteristic mound culture thinned out downstream, according to Thomas, coming to an end about Natchez. Lower Louisiana and coastal Texas are represented as outside the culture. This conclusion, however, can no longer be maintained.[79]

9. The eastern Gulf states affiliated with the Mississippi-Ohio area.

10. This Gulf Drainage culture extended into the southerly part of the Atlantic slope, perhaps as far as the Great Pedee, though its most characteristic form ended at the Savannah.

11. Peninsular Florida—the whole peninsula, not its southern half only—formed a distinct subarea.

12. Another distinctive subarea was the South Appalachian district, the intermountain region of upper Tennessee River drainage.

Except for the slump in the Ohio Valley from prehistoric to historic time, this archaeological classification agrees well with the ethnological one developed in the present work, even to many details.

Holmes on pottery.—Holmes's study of eastern pottery[80] is also so comprehensive as to invite comparison. Again, I have taken his basic map, simplified it to dispense with the use of color, and added subareas from his text (map 16).

[79] As a result of recent exploration in Louisiana. In fact, Hopewell culture traits are now recognized in that state (F. M. Setzler, Jour. Wash. Acad. Sci., 23, no. 3, 1933, and USNM–R 82, 1933. See also J. A. Ford, Dep't of Conservation, Louisiana Geol. Survey, Anthr. Study no. 2, 1936, p. 219). Evidently, archaeological work on the lower Mississippi had not been prosecuted in Thomas' time.

[80] BAE–R 20, 1903.

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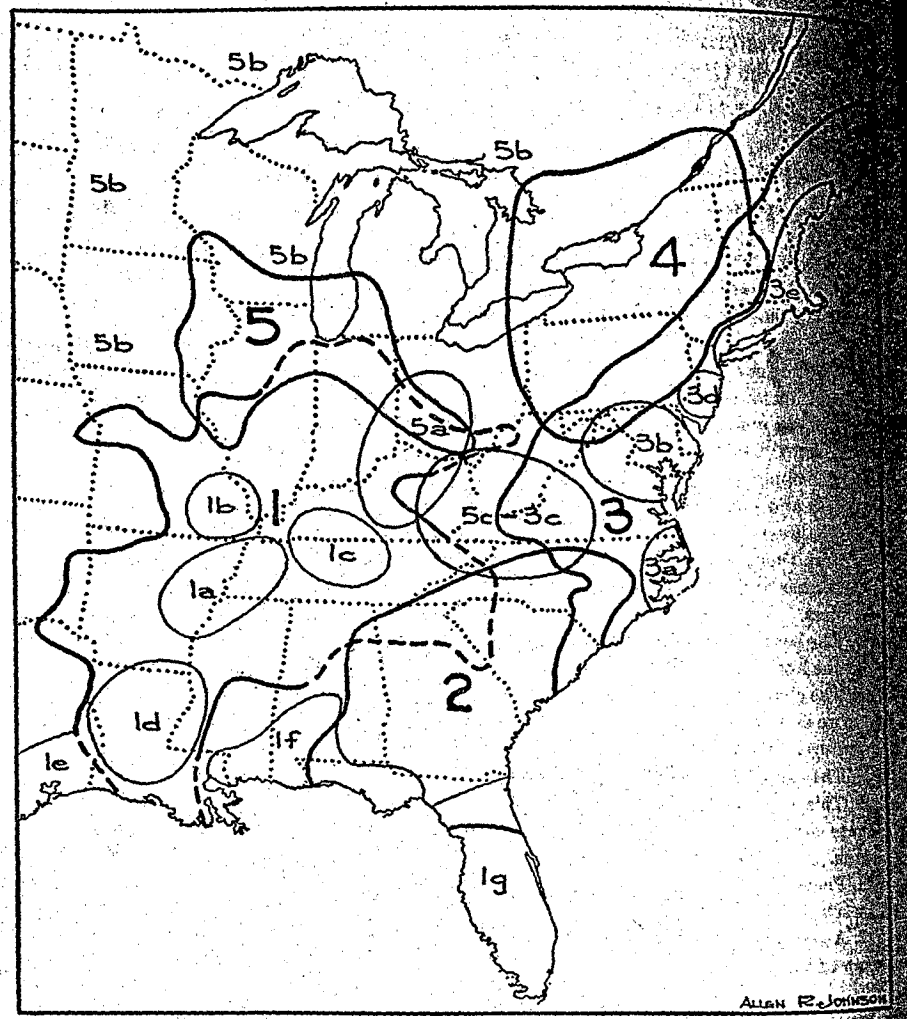
Holmes's areas, or "groups" as he calls them, represent the distribution ... tery types, and therefore, as is expectable, sometimes overlap. The ... are regions or centers of characterization of special types, and are not ... localized by Holmes. The relation of some of them to the primary ...



Map 16. Pottery Types of the Eastern United States; after Holmes. Major groups (from Holmes's map): 1, Middle Mississippi Valley; 2, South Appalachian; 3, Middle and North Atlantic Slope; 4, Iroquoian; 5, Northwestern (or Upper Mississippi Valley). Subgroups (from Holmes's text): 1a, East Arkansas-West Tennessee; 1b, Southeast Missouri; 1c, Cumberland Valley; 1d, Lower Mississippi Valley; 1e, (Southeast) Texas; 1f, Gulf Coast; 1g, Florida (Peninsula). Relation of 1d, e, f to 1 not clearly defined. 3a, Pamlico-Albemarle; 3b, Potomac-Chesapeake; 3c–5c, Piedmont Virginia and Apalachee-Ohio; 3d, New Jersey; 3e, New England; 5a, Miami Valley; 5b (Peripheral) Northwest; 5c, see 3c.

left ambiguous. It is not clear, for instance, whether Lower Mississippi, Texas, Gulf Coast, Florida (1d, 1e, 1f, 1g, of map 16) are to be construed as somewhat divergent variants of the Middle Mississippi Valley group or as coördinate but lesser groups. Similarly with the Miami Valley type (5a), which is treated ...

... type of Northwestern (5) but lies largely outside the assigned limits ... Piedmont Virginia (3c) and Apalachee-Ohio (5c) seem to be substantially one.

The following findings result from a digest of Holmes's work:

The Lower and Middle Mississippi and nearly the whole of the Ohio Valley formed a unit, in which eastern pottery reached its climax. Local types of definite characterization centered in the center of this area, about the confluence of the Ohio and Mississippi.

The Lower Mississippi showed some variation from the Middle, and the Gulf Coast and Florida still more, but traits like modeling and incising linked these subareas with the Mississippi area.

The Northwestern area had its most definite characterization about the upper Mississippi and Lake Michigan—more or less in the region of Thomas' Illinois and Wisconsin areas—but extended also to the middle Missouri and northern upper Great Lakes.

The Iroquoian area of the lower Great Lakes, in spite of some overlap with the Atlantic Slope culture, was easily distinguishable from this in its types.

The (North and Middle) Atlantic Slope area was predominantly coastal. Its greatest extension inland was in the region of West Virginia, where the interior held no well-characterized pottery art. To the south, the Atlantic Slope area extended farther along the coast than in the piedmont.

The South Appalachian pottery type occurred mainly in the southernmost Atlantic area. It centered in Georgia and reached well into the North Carolina piedmont. It faded out quickly in Alabama and did not reach far into the Florida peninsula. On the northwest its range was occupied also by the Middle Mississippi type, and on the southwest by the Gulf Coast type. South Appalachian ware was characterized by stamped decoration and simplicity of shapes.

This South Appalachian[82] or "South Atlantic" type is the only one of Holmes's "groups" or types to clash with the ethnological areas developed in the present work. It unites parts of my Southeastern and South Atlantic areas. It is easy to conceive of a special pottery style as spreading, or maintaining itself, irrespective of preponderant cultural affiliations; and this is probably what happened. If, on the other hand, this "South Appalachian" distinctness of pottery is symptomatic of a general cultural distinctness, the fact does not necessarily invalidate the views previously advanced in this paper, since the focal point of the Southeast has been seen as lying at its western margin, on the Mississippi, and Georgia would therefore be peripheral and more or less transitional. My northeastern boundary of the Southeast at the Savannah is avowedly tentative. Also, the historic prominence in the Southeast of the chief people of Georgia, the Creeks, has been indicated as not ancient but as enhanced by white contacts.

Whether the Lower-Middle Mississippi and Gulf Coast modeled and incised ware, or the Georgia type stamped ware, is on the whole the earlier, is not clear, but they certainly overlapped in time, both Holmes[83] and Moore[84] reporting them as associated in burials.

[82] Holmes's "South Appalachian" pottery area is not to be confounded with Thomas' "South Appalachian" mound area, which lay in Tennessee River and therefore Mississippi drainage. The historic tribes in the Holmes area were Muskogian, Yuchi, and Siouan; in the Thomas area, Cherokee.

[83] BAE–R 20:131, 1903.

[84] Jour. Acad. Nat. Sci. Phila., 11: pls. 9–15, 1897 (Georgia Coast); 11:453, 1901 (Northwest Florida Coast, I); 12:351, 1902 (Northwest Florida Coast, II); 12:474–491, 1903 (Apalachicola River).

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There is indeed a suggestion, through the Georgia stamped ware, of a ... ary subcenter within the Southeast near its eastern end, more or less ... region of the Lower Creeks. Nevertheless, it takes more than a pottery ... tion technique to establish a type of culture. A ware might easily ... through only part of the culture in which it originated, yet penetra... an adjoining culture. Until the occurrence of stamped ware is po... correlated with the occurrence of a sufficient number of other dist... traits, nothing of a general cultural nature can be certainly inferred fr... pottery.[84]

Shetrone on Ohio.—Shetrone's review of the archaeology of Ohio ... special interest at two points. First, it suggests cultural connection pe... the Fort Ancient culture of Ohio and the Iroquoian of New York. This ... accord with the ethnological interpretation here followed.

Shetrone's second point, that to date the evidence on the two outstand... prehistoric culture types of Ohio, Fort Ancient and Hopewell, indicates ... as contemporary, is puzzling. It is difficult to imagine them as retaining ... individuality while geographically interdigitated in the Miami and S... valleys. That they overlapped in time is likely enough; but the whole situ... would be much more comprehensible if their major durations and peaks ... fered by some centuries. Shetrone's conservatism is commendable, but ... evidence may dispel its negativism.[86] After all, the data on Ohio archaeol... rich as they are, have generally not been accumulated with any preemin... sense of historical problem. If the two cultures prove to be at all distinct chro... ologically, it is likely that the Fort Ancient one will be construable as the la... in spite of its wider distribution. This is indicated by its relations with the ... toric Iroquoian culture; also by its association at Madisonville with Europe... objects.[87] The more advanced Hopewell art seems farther from anything pr... duced in the vicinity in Caucasian time, and on an aesthetic level with the po... tery, shell, mica, and copper art of Arkansas, Tennessee, and northern Georgi... which was also presumably moribund or extinct at the opening of the histor... period. According to the view here held, this older series of localized, intensiv... culture culminations, of an age perhaps not very remote but definitely pre... Caucasian, had partly disintegrated and shrunk areally, and remained be...

[84] Stirling has dealt with the stamped ware in an important paper read at the Nationa... Research Council Conference on Southern Prehistory at Birmingham, Alabama, in 19... from which I do not cite for the same reason as already mentioned for Swanton's two paper... there delivered. Stirling's accompanying map is valuable, and is novel in that it does ... attempt to divide the whole eastern United States area between cultures exclusive of eac... other, but shows the extent of distinctive culture types or wares. In other words, he begin... not with a given area to be accounted for, but rather with cultures about which something is... known, without worrying about gaps. His method also results in overlaps of areas, but this ... is as it should be, since the prehistoric period was not static but undoubtedly contained geo... graphical shifts and successions in time.

In Anthr. Essays, UC, 351–357, 1936, Stirling goes more fully into the archaeological ... culture types of Florida. Incidentally, he sees almost no Floridian-Antillean connections.

[85] AA 22:144–172, 1920.

[86] Shetrone's recent book, The Mound Builders, 1930, adds nothing positive on the ... problem.

[87] E. A. Hooton and C. C. Willoughby, PM–P 8:1–137, 1920.

...ented in historic time by the tribes of the Lower Mississippi climax, ...with perhaps a special decay on the side of art.[88]

The Holmes and Wissler areal classifications.—The two general archaeolog... ...classifications of Holmes[89] and Wissler[90] may also be compared. They differ ...except in the east.

The two principal differences are that Wissler divides the Upper Mississippi ...Lakes area (IV) of Holmes into two: an Iroquoian (3) and a Great Lakes

TABLE 5

HOLMES AND WISSLER ARCHAEOLOGICAL AREAS

Holmes	Wissler
I. North Atlantic	1. North Atlantic. Center: New Jersey a. New Jersey to New Hampshire b. Maine to Newfoundland
II. Georgia-Florida	2. South Atlantic. Center: Georgia a. Georgia to Maryland b. West Florida c. Peninsular Florida
III. Middle and Lower Mississippi Valley	4. Mississippi-Ohio. Center: Western Tennessee x. Variant: Ohio y. Variant transitional to 2: Gulf Coast
IV. Upper Mississippi and Lakes	3. Iroquoian. Center: New York 5. Great Lakes. Center: Wisconsin x. Variant: Missouri Valley
XI. Northern-Central (Labrador to Alaska)	12. Canadian Interior (Labrador to Alaska)

(5) area; and that he places the boundary between his North and South Atlan... ...tic areas (1 and 2) at the Delaware instead of the Savannah. Holmes in fact ...recognizes only one area as outright on the Atlantic (I). His Georgia-Florida ...region (II) lies rather more in Gulf than in immediate Atlantic drainage,[91] ...and grades imperceptibly into the Mississippi Valley region (III), although ...set off "somewhat distinctly" from the Atlantic slope (I).[92] This tends to re...

[88] Since 1932, Midwest archaeologists, coöperating under the leadership of W. C. McKern, ...have adopted a taxonomy by which they successively classify their cultural material into ...bases, patterns, phases, aspects, and foci. This approach should result in an objective and ...comparative organization of data, which in turn will almost inevitably eventuate in a rea... ...sonably dependable relative chronology—the beginnings of which, perhaps, are already ...emerging. Thus, Cole and Deuel, Rediscovering Illinois (Univ. Chicago, 1937), Appendix I, ...put Gartner, Baum, and Madisonville into the Fort Ancient aspect of the Upper phase of ...the Mississippi pattern; Etowah, Moundville, Aztalán into the Middle phase of Mississippi; ...and Hopewell 17 and Turner into a Woodland pattern. Other archaeologists tentatively ...keep Hopewell separate from both Mississippi and Woodland. "Upper" and "Middle" Mis... ...sissippi do not refer to a time sequence, nor explicitly to an areal distribution, but to a nexus ...of traits; in other words, to an empirically determined culture growth or type, whose geog... ...raphy and chronology can then be investigated.

[89] Areas of American Culture Characterization, AA 16:413–446, 1914; map, pl. 32.

[90] The American Indian, ch. 15; map, p. 262 (1922 ed.).

[91] It differs, therefore, from the approximately corresponding "South Appalachian" area ...of his pottery classification, which lies more in Atlantic than in Gulf drainage.

[92] P. 421.

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duce Georgia-Florida to a variant of Mississippi Valley; which accord... Holmes's bringing a salient of the Mississippi Valley area through no... ern Georgia to the sea, thus actually separating Georgia-Florida from ... Atlantic.

Both authors agree in setting off the Atlantic slope from the rest of the... in assigning the Upper Mississippi and Missouri with the Great Lakes... reckoning much of the Southeast with the Lower Mississippi and Ohio... is in accord with the ethnological groupings of the present paper. Al... point at which Holmes and Wissler differ most essentially, the attribut... Georgia, is one at which my classification is hesitant, namely, in regard to... geographical definition between the Southeast and South Atlantic areas.

X. CULTURE AREAS: MEXICO AND CENTRAL AMERICA

There appears to be no one living who really controls the existing knowledge of the native cultures of both Anglo-American and Latin-American North America. This section of the present work is therefore necessarily inadequate and preliminary. It is included because of the obvious dependence of the cultures north of the Rio Grande on those of Mexico-Guatemala in many respects. An analysis of the former without consideration of the latter would be like an anatomical description of a mammal confined to the parts below the neck on the ground that the head was difficult to deal with. In proportion as the judgments here rendered are unsatisfactory, they should stimulate sounder ones. In any event, the hesitancy of the map for Mexico should draw attention to a glaring chasm in ethnological knowledge and interest. The fact that Spanish-speaking Europeans colonized one part of the continent and English-speaking ones finally settled the rest is scarcely a reason why anthropological study of the two regions should continue indefinitely to be pursued on separate lines.

It is not only the barrier of modern speech difference that has brought about the aloofness. In the United States and Canada, knowledge has been acquired essentially through ethnological field studies in the past fifty years. In Mexico and Central America, the native cultures have in many parts been long since swept entirely away, and where they survive it is almost always spottily, in hybrid form. The great volume of sources is therefore either historical or archaeological; and the nature of the materials has tended to impose methods of handling them and, tacitly, of viewing them. Interest, being aroused in events, was diverted from culture. The archaeology of Mexico to date suffers not only from incompleteness of data, but also from the inclination to interpret before the available data are classified. The situation is the opposite of that in the United States, where habits of description and analysis have tended to choke even healthy attempts at historical interpretation.

ISTHMUS

Panama and all Costa Rica except perhaps its extreme northwest seem to form a larger cultural unit belonging with South America. Brinton long ago recognized the southern boundary of Nicaragua as the ethnographic frontier of North against South America.[1] Conifers find their virtual southern limit at the same line.[2] Speech everywhere in the Isthmian area is undoubtedly Chibchan, or is put in a Cuna group considered probably Chibchan. Ancient gold work is of Colombian type. Architecture and sculpture remained undeveloped. Maya influences in pottery styles are absent or indirect and weak.

If any notable subdivision of the culture existed, it is likely to have been on the basis of a relatively arid Pacific and a wet Atlantic slope. Lothrop recognizes an archaeologically separate "Highland area" in north-central Costa

[1] The American Race, 164, 1901: ". . . the mountain chain [*sic*] which separates Nicaragua from Costa Rica, and the headwaters of the Rio Frio from those of the more southern and eastern streams, is the ethnographic boundary of North America."

[2] Sapper, Mittelamerikanische Reisen und Studien, 1902, puts the limit within Nicaragua, nearly along latitude 13°, north of Lake Nicaragua (pl. 2).

...and the shores of the Gulf of Nicoya he includes with western N... in a "Pacific area." The former extends "southward, with local modi... into Colombia and Ecuador."[3]

1. ATLANTIC NICARAGUA-HONDURAS

This is an area of tropical rain forest, with some coniferous stands a... altitudes. The historic tribes—Mosquito, Ulua, Sumo, Paya, Xicaque, ... can be reckoned as "uncivilized." They had no large towns, left no ... monuments, and their archaeological remains are so poor and infrequ... to have attracted little exploration. In relation to North America, ... angular area formed a side pocket: Mexican-Guatemalan influences ran... the Pacific face of Honduras and Nicaragua. It is rather remarkable ho... imprint Maya civilization left on this immediately adjacent low culture ... cially as both were situated in tropically forested lowlands. On the other ... the door was open into Atlantic Nicaragua-Honduras from the adjoining ... ical Isthmian area, through which South American influences appear to ... penetrated. Some of the languages, such as Ulua-Sumo, are probably of ... chan affinity.

The position of the Rama and Matagalpa is not quite clear. They may be... with the last preceding cultures and the next to be discussed, respectively.

2. PACIFIC NICARAGUA

This area comprises the Pacific frontage from the Gulf of Nicoya to the ... Fonseca, that is, parts of Costa Rica and Honduras as well as Nicaragua ... may take in Salvador. It is a well-marked tract of arid deciduous forest. C... turally it is the Chorotegan area. The groups involved are, from southeast ... northwest, the Orotina, Nahuan Nicarao, Diri, Subtiaba, Chorotega; the ... land Matagalpa may possibly have to be included. Lothrop, dealing with ... archaeology, calls this the "Pacific area" of Nicaragua-Costa Rica and exten... it somewhat farther inland than is shown on map 6. Both Maya and presumab... Toltec and Nahuan influences are discernible in pottery and sculpture. South ... American relations are less evident.

3. SALVADOR

Salvador is only tentatively suggested as a separate area. It may prove to be ... no more than a subarea of Pacific Nicaragua or Upland Guatemala. The peo... ples under consideration are the Nahuan Pipiles and branches of the Lenca ...

4. UPLAND GUATEMALA

This is the area of the upland nations of Maya family, the Pokomam, Cakchi... quel, Qu'iché, Mame, Tzental, Tzotzil, and others, plus a few alien intrusions ... or remnants, especially of Nahuan Pipiles. The area covers highland Guate... mala and parts of Chiapas north and west down to about the 600-meter con...

[3] Pottery of Costa Rica and Nicaragua, MAIHF–C 8, 1:89, fig. 1 (p. xxv), 1926.

[4] See W. Lehmann, Ergebnisse einer Forschungsreise, ZE, 1910, 687–749; H. J. Spinden, Notes on the Archaeology of Salvador, AA 17:446–487, 1915; F. Weber, Zur Archaeologie ... Salvadors, Seler Festschrift, 619–644.

... also the steep Pacific slope. Most of it is tierra templada or fria; the ... vegetation varies between shrub steppe, moist savanna, moist coniferous, oak- ... and arid forest, with an edge of tropical rain forest on the northeast. ... culture is generic but not specific Maya, less developed in architecture, ... pture, and calendar than that of the Maya proper. There are more evi... than among the Maya proper of Mexican influences, such as ball courts, ... more relations to Salvador and Pacific Nicaragua.[5]

5. YUCATAN PENINSULA

This culture area covers the entire peninsula of Yucatán; that is, much more than the modern state of Yucatán. It includes, on the one hand, a strip of northwestern Honduras, on the other, most of Tabasco; and extends into Guatemala and Chiapas about as far as the tierra caliente, which according to Sapper generally lies below the 600-meter level. It comprises all of the tierra caliente in the region except probably a strip north and east of Coban in Guatemala, largely corresponding to the modern territory of the Kekchi. The whole area is tropical rain forest, except for the northern end of the peninsula, which is variously described as jungle, scrub, and arid forest. Sanders calls it jungle; Sapper, savanna alternating with tropical forest. The culture of the Yucatán Peninsula was the classic Maya one, old and new period. The peoples today in the area of Maya ruins are, besides the Maya and Lacandón, the Chontal, Chol, and perhaps Chortí—the decisively lowland members of the family. Whether Comalcalco, Palenque, and Copan were built by the ancestors of these three nationalities or by the ancestors of the modern Maya proper, there seems no sure way of deciding at present.

RELATIONS OF MAYA UPLAND AND LOWLAND

Spinden makes a generalized, archaic form of Maya civilization originate in the Mexican-Guatemalan uplands, where maize culture became established, which was then transported north into the lowlands by the carriers of the old and new Maya cultures.[6] The habitus of maize is construed as indicating that its first domestication took place in a tropical highland and not in the rain-forested peninsula of Yucatán. This may be true, though it has been questioned.[7] But the rest of Spinden's interpretation is wholly hypothetical. So far as we know now, the specific Maya civilization, which can be traced back about 2000 years, existed chiefly or wholly in the lowlands. Whether it first developed this specific form there or in the uplands, and whether it was transplanted at all, are points on which there seems to be no clear evidence. The domestication of maize may have taken place several thousand years before

[5] Cf. A. M. Tozzer, Time and American Archaeology, Natural History, 27:210–221, 1927; esp. map, fig. 4.

[6] ICA 19 (1915, Washington):269–276, 1917; Ancient Civilizations of Mexico and Central America, AMNH–H 3:48, 1922; Geogr. Rev., 18:650, 1928.

[7] By Sauer and Brand, in Aztatlán, UC–IA no. 1:59, 1932. Their point seems valid, that the inherent requirements of the maize plant are completely met by a frostless summer-rain climate, and that irrigation is therefore an unnecessary factor to assume for the circumstances of domestication. A much larger area than the Mexican Mesa Central or Guatemala Uplands is accordingly open to the possibility of being the original home of maize.

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Maya civilization as such began. The two events may have been in the ... book but in totally different chapters. It is quite conceivable that the ... foundation of Maya culture was laid in the highlands, and that the very ... plantation into the lowlands was a stimulus which helped to develop the ... specialized Maya sculpture, time system, and other features. But, until ... ology delivers some unambiguous evidence, such a view is theory. The ... standing fact to date is that all specific expressions of Maya as distinct ... Mayoid civilization have been found in the relatively low tierra caliente.

Sapper devotes a chapter[8] to the problem of the original home of the ... and while he leans to the Chiapas-Guatemala highland as the most pro... source, he leaves the question open, and emphasizes that Mayan peoples ... have been settled in tropical rain forest at a very early time. This still ... a fair statement, in spite of the progress of Maya archaeology during the ... generation.

Sapper[9] gives a table of altitude distribution of cultivated plants in Gua... mala-Chiapas which has a bearing on the relation of lowland and upland in ... past. This table summarizes approximately thus:

Native Plants

Restricted to Tierra Caliente (below 600 m.): cotton, cacao, henequen
In Tierra Caliente and Templada (to 1800 m.): tobacco, chile, yucca
In Tierra Caliente, Templada, and Fria: maize, beans, agave

Introduced Plants

Restricted to Tierra Caliente: rice, coffee
In Tierra Caliente and Templada: sugar cane, banana, orange
Restricted to Tierra Fria (above 1800): wheat, barley, peach, potato

It follows that in native times all highland plants could be and presumably ... were grown in the lowland, but that the reverse was not true: some lowland ... products were restricted to the lowland and others extended up only into the ... 2000–6000-foot zone. The plants confined to the uplands are all introduced by ... the Spaniards. There certainly is no warrant in these facts for regarding low... land Maya agriculture as an appendix or outgrowth of upland. It shared in ... all that the upland possessed; it may or may not have been basic to it.

A classification of the Mayan languages as a group is interesting for its ... bearing on the problems under discussion. Stoll's attempt in this direction ... not wholly satisfactory.[10] However, his and Berendt's vocabularies, supple...

[8] Die Heimath der Mayavölker, 390–400, in Das nördliche Mittel-Amerika, 1897. On p. 394 he estimates the modern population of the lowland Maya tribes (Maya, Lacan... don, Chontal, Chol, Chortí) at somewhat less than 400,000; of the highland tribes (a... others), at 850,000–900,000.

[9] Das nördliche Mittel-Amerika, 402. See also Die feldbauliche Aupassung der Indiane... Guatemalas, ICA 25 (1932, La Plata), 1:309–321, 1934.

[10] Zur Ethnographie der Republik Guatemala, 1884. His classification is: A, Huastec; B, ... subdividing into Ia, b, IIa, b, c, as follows: Ia, Maya, Mopan; Ib, Chontal, Tzental, Tzotzil, ... Chanabal, Chol; IIa, Quekchi, Pokonchi, Pokomam, Chorti; IIb, Cakchiquel, Tz'utujil, ... Qu'iche, Uspantec; IIc, Ixil, Mame, Aguacatec.
Wm. Gates also has a classification of the "Mayance" languages in Appendix XII of Mor...

...ated by Sapper's, allow a tentative arraying of the dialects in groups. I have ...ed to express the internal classification of the linguistic family diagram... ...tically in table 6. Single languages, or groups of closely related dialects, ...e enclosed in boxes of light lines. Boxes of heavier lines combine the more ...early related of these, in some instances with overlapping. The degree of ...ifferentiation between both smaller and larger groups is suggested by the ...stances between light and heavy boxes. A few supplementary or special rela... ...ons are shown by broken arrows. The main division, so far as linguistics is ...oncerned, is into two groups: Lowland Maya and Highland Maya. In the ...main, the territories covered are also lowland and highland. But on the one ...and Tzental-Tzotzil-Chañabal, Motozintlec, Jacaltec, and Chuj of the Low... ...and division are actually spoken in the western highland, above 2000 feet; ...and on the other hand Kekchi is a Highland tongue although now spoken ...ostly in the tierra caliente.[11] These instances of nonconformity of speech ...filiation and altitude habitat are marked in the diagram by an asterisk.

Very remarkable, in view of the geographic separation, is the similarity of Chicomuceltec and Huastec.[12] That Chicomuceltec shows certain additional re...

...y's Inscriptions at Copan, Carnegie Inst. Publ. no. 219, 1920. He recognizes seven main ...branches, which, with their dialects, are:
1. Maya (Maya, Itzá, Lacandón)
2. Tzental (Tzental, Tzotzil, Chontal, Chañabal)
3. Cholti (Cholti, Chortí)
4. Mame (Mame, Ixil, Aguacateca, Solomeca, Jacalteca, Chuje, Chicomucelteca, Motozintleca)
5. Quiché (Quiché, Cakchiquel, Tzutuhil, Uspanteca)
6. Pokom (Pokomán, Pokonchí, Kekchí)
7. Huasteca

Gates's discussion of the interrelationships of the first six main branches is interwoven with nonlinguistic considerations, but as nearly as I can make out comes to this: Chol(tí) is nearest to Tzental, probably next closest to Mame (*sic!*), then to Maya, most different from Quiché-Pokom. This seems equivalent to a main division into Quiché-Pokom, corresponding to my Highland and Stoll's II but without Mame; and into Tzental-Cholti-Mame-Maya, corresponding to my Lowland and Stoll's I but with Mame added. (With regard to the construal of the Mame group as of Lowland type, I must side definitely with Stoll against it; although Mame is somewhat the closest of the Highland languages to the Lowland, as might be expected from geography, Quiché-Pokom being on the whole the most remote, and marginal to the Nahuan Pipil). Gates's valid point seems to be that Chortí goes with Chol(tí), its classification with Pokom resting upon the erroneous tribal identification of an informant by Stephens. By this correction the territory of the ancient city of Copan is restored to Lowland speech.

Beyond these points, Gates is not altogether clear: as when (p. 611) he has Tzental-Chol agreeing more often with Maya than with Quiché-Pokom, but on the other hand Maya "frequently in accord" with Quiché-Pokom and "rarely" with intervening Tzental-Chol. In short, X—Y<X—Z, but Y—Z<Y—X. This can only mean that Y (Maya) is linguistically intermediate between X (Tzental-Chol) and Z (Quiché-Pokom); which is unlikely in view of the fact that X (Tzental-Chol) is geographically intermediate. Gates's explanation seems to be (pp. 611, 615) that Tzental-Chol (with Mame) represents an archaic, little-changed form of Mayan, whereas Maya and Quiché-Pokom represent later stages of Mayan speech, associated with two new kingdoms. To this view there are two objections: first, that degree of linguistic similarity must be determined purely from linguistic evidence, not from historic or cultural data; and second, that comparative Mayan philology must be advanced much farther before we shall be in a position to judge which languages are most archaic, that is, closest to reconstructed primitive Mayan. This primitive Mayan has not yet begun to be defined.

[11] Sapper, Das nördliche Mittel-Amerika, 397, has shown that the Kekchi advanced northward into the lowland.

[12] Sapper, 244.

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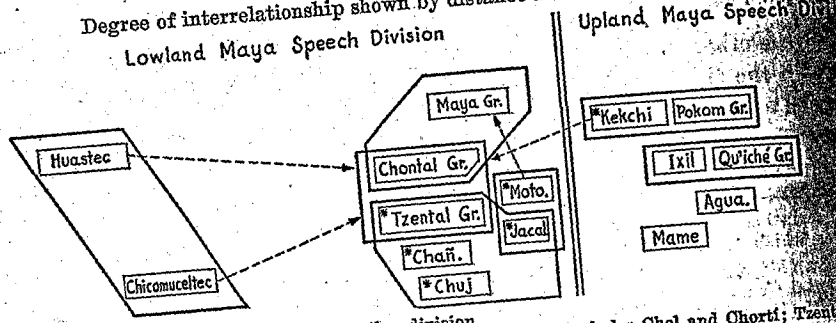
semblances to Tzental, Chañabal, Chuj, and Jacaltec, which border ... on the north and east, is not surprising; no more than the fact that the ... relative of Huastec, other than Chicomuceltec, is Chontal, which lies ... to it of all other Mayan languages, on their northwest frontier. What ... significance, surely, is that the little Chicomuceltec territory lies at least ... below the 600-meter contour; and that the language is very different ... Mame, of the Highland speech division, which adjoins it on the sou...

TABLE 6

CLASSIFICATION OF THE MAYAN LANGUAGES

Degree of interrelationship shown by distance and inclusion in heavy lines.



* Tribes actually living in habitat of other division.
Maya group includes Mopan and Lacandón; Chontal group includes Chol and Chortí; Tzental ... includes Tzotzil; Qu'iché group includes Cakchiquel, Tzutuhil, Uspantec; Pokom group, consi... Pokomam and Pokonchí.
Abbreviations: Moto., Motozintlec; Chañ., Chañabal; Jacal., Jacaltec; Agua., Aguacatec.

the same way Chortí, although far separated geographically from Chol an... Chontal, is very close to them as a dialect. It occupies the same position, ... tively to Maya proper, on the southeast as Chol and Chontal do on the sout... west. These three languages seem to have been originally distributed in a zo... separating the Maya proper from the Mayan Lowland-type languages spok... in the northwestern uplands and from the Highland-type languages of the re... maining uplands.

These relations between degree of speech affinity and territorial distributio... of dialects all indicate that a distinction between lowland and highland ha... been of profound importance in Mayan history for a very long time past.

That some of the more important Highland dialects, like Mame, Qu'ich... Cakchiquel, formerly seem to have extended down to the Pacific Ocean is ... doubt due to the narrowness of this southern coast and its probable failure t... develop life habits, culture, and speech groups of its own.

A quality of narrowness of range applies to Mayan culture as a whole, Up... land and Lowland conjoined, almost as much as to either of these division... alone. This culture never penetrated to any serious extent beyond the ter... ritory held by the historic Mayan tribes. There seems to be no true Maya... stratum or archaeological horizon in Oaxaca and Vera Cruz, nor eastward b... yond Salvador. Mayan relations or influences may be discernible as far as th... Totonac and Chorotega. But influences are another thing from presence of the... culture; and at that, the distances in each direction are not great—less than...

...the mouth of the Mississippi to that of the Ohio. The generic Mayan ... as the specific Maya culture were nonexpansive, nonpropagandizing, self-...cient, conservative; they both remained sharply localized, like the early ...tures of Peru—Chimu, Chavín, Nazca. Sapper's maps of the limits of sur-...ving Mayan place names show very nearly the same territory as that oc-...ed by historic Mayan tribes or that containing ruins or sculptures of ...ayan type.[13]

...Incidentally, if the specific Maya civilization were due to an Asiatic people ...miliar with elephants, these immigrants would have had to establish them-...es on Pacific frontage, push across the Guatemalan uplands, and, after ...descending into the peninsular lowlands, revive the flowering of their art. ...the much-disputed carvings really represent elephants, it seems at least as ...ely that they represent acquaintance with a proboscid species which sur-...ved locally into the last pre-Christian millennium.

The late Maya cities in the northern part of the peninsula lie in relatively ...d jungle or scrub forest, the older ones apparently all in true rain-forest ...untry.

6. OAXACA-TEHUANTEPEC

From here on, the areas become especially tentative. The language distribu-...on is irregular, and archaeology has been prosecuted at special points of in-...erest rather than systematically.

The Zapotec are quite generally accorded a culture type of their own, but ...o one seems to have been interested in its limits. The Mixe-Zoque region be-...tween them and the Mayan uplanders is little reported. I incline to include ...this tract with the Zapotec on account of the association of Oaxaca and Tehuan-...tepec in Aztec eyes. Since what is called Zapotec pottery is modeled, and that ...known as Mixtec painted, I put the western boundary of the area between ...these two peoples.

There remains much diversity within this area. The coast is hot, Oaxaca ...Valley temperate, the adjacent mountains (above 8000 feet) cool, the Isthmus ...low and warm. The Zapotec were a relatively cultured people, the Mixe and ...Zoque passed as barbarous. The Mixe and Zoque generally lived at lower levels ...than the Zapotec of Oaxaca, Etla, Tlacolula, Ejutla; that is, presumably in ...denser vegetation. This may be the reason for their backwardness. Within the ...Zapotec territory an older culture of Monte Albán and a later one of Mitla are ...distinguished.[14] The former has more Mayan, the latter more Toltec-Aztec affi-...nities; but both show considerable individuality. In speech it is customary to ...connect Zapotec with Mixtec and other languages on its west. But the relations ...of these tongues are far from clear. They differ pretty heavily in vocabulary, ...and their similarity of plan may prove to be a secondary converging develop-...ment of habitus in such matters as tonality and phonetic condensation. On ...the whole, it seems expectable that they will prove related; but we are only at

[13] Das nördliche Mittel-Amerika, maps 3, 5, 7, 8. See also S. K. Lothrop, The Southeastern Frontier of the Maya, AA 41:42–54, 1939.

[14] The recent excavations carried on by the Mexican government at Monte Albán under A. Caso are revealing a succession of cultural stages.

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This is an area apparently difficult to classify in terms of phytogeographic concepts evolved mainly north of the Rio Grande. Its high borders are pine forest; the basins are variously labeled scrub, desert, savanna. The determining factors of the vegetation seem to be the combination of tropical summer rains and winter drought with moderate temperature due to unbroken elevation. Morelos is lower and warmer, growing cotton, sugar, and rice, and should therefore perhaps have been counted rather with Guerrero. Its culture at the discovery seems to have been of Aztec type; but Xochicalco is evidence of an earlier culture which was not specifically Toltec.

The Southeastern Central Mesa is, with the Guatemala Highlands, one of the areas in which the first domestication of maize is usually assumed by archaeologists to have taken place. While it would be idle to contest this unproved assumption, it is well to remember that there may have been a great gap in time between the first maize farming and the archaeological period which it has become customary to call Archaic; and as for the antiquity of the Archaic, the vicinity of Mexico City has been so much more intensively explored than all other parts of the republic that the prehistoric record is much fuller and therefore seems longer. In other words, lack of serious search elsewhere is not proof of the priority of culture in the Basin of Mexico.[16] Still, there is no doubt that this region is one in which relatively high cultures flourished for a long time, and with essential continuity.

10. MICHOACAN

Michoacán, the country of the Tarasco, who are fairly well known through the compilations and interpretations of León and Seler,[17] is the south-central part of the Mesa Central. Geologically, climatically, and vegetationally it is allied to the area last named above. Ethnically it was a unit, and culturally evinced about the expectable degree of similarity to the Toltec-Aztec center; though with definite provincial integrity, as is well revealed by Seler's admirable analysis.[18]

11, 12. JALISCO HIGHLAND AND JALISCO COAST

West and northwest of the Tarasco of Michoacán lived groups generally credited with speaking a dialect of Nahua or Mexicano. This may be correct, but it does not follow that Nahua was the sole speech of the area, since the Spaniards troubled themselves little about distinct local languages if there were Nahua-speaking elements in the population to interpret for them. The culture seems still to have been of Mexican type: pyramid mounds occurred. Sculpture was poor or lacking; there appears to be no mention of calendar

[16] Vaillant's continued excavations and analysis of the succession of cultures in and around the Valley of Mexico, published cumulatively in AMNH–AP, give an apparently continuous record from the historic Aztec back to the earliest known "Archaic" phase. They show conclusively that this phase is far from being really archaic or incipient; and in Vaillant's opinion the whole sequence was unrolled in a millennium and a half. According to botanists, a considerably longer period must probably be allowed since the domestication of maize.

[17] N. León, Los Tarascos (Mexico, Museo Nacional, 1904); E. Seler, Die alten Bewohner der Landschaft Michuacan (Gesamm. Abhandlungen, 3:33–156, 1908).

[18] Thus the calendar seems to have been essentially the Aztec one: Seler, 156.

the threshold of knowledge. Some would go so far as to connect Zapotec-Mixe with the Otomí group; which, however, seems a step farther into speculation which only the future can prove or disprove.

The heart of the Zapotec culture lies in upland. The hot coast is little known and may belong culturally with adjacent coastal stretches, though Zapotec speech extended down to the ocean.

7. GUERRERO

Guerrero is one of the least known regions of the continent, ethnologically and archaeologically. Its prehistoric remains seem to show some particularity. Tentatively I include in the area adjacent parts of Oaxaca and Michoacán. The region is hot and subarid, the vegetation mostly jungle, scrub, or savanna.

8. VERA CRUZ

The state of Vera Cruz seems to coincide approximately with a fairly definite ethnic and cultural region. This consists of the stretch of tierra caliente and lower tierra templada, which follows the Gulf coast between the Mayan peoples and the barbarous tribes beyond the Pánuco. The inhabitants were Nahua nationalities such as those of Coatzacoalco and Cuetlaxtlán; the Totanac; and the Mayan Huastec. The last named may constitute a separate subarea. The climate of the Vera Cruz area is much wetter than that on the Pacific side of Mexico, and allows of stretches of tropical rain forest, behind which rises deciduous forest. At the Pánuco, or rather a little beyond it, climate and vegetation seem to change rather abruptly, as do culture and speech affiliation.

Nearly at Punta Bernal the Vera Cruz shore alters. To the north, dune formations predominate; to the south, coral reefs and mangroves. The tierra lowland is generally wider in the south than in the north, except for an area immediately on the Pánuco. The northern coast was held by Huastec and Totonac; the southern, mostly by Nahua-speaking peoples. The Cerro Montoso type of archaeological remains is characteristic of the (southern end of the) northern coastal stretch; the Ranchito de las Ánimas type, of the southern district.[15] It would therefore appear that two cultural subareas can be distinguished within the Vera Cruz area, the line of demarcation being approximately the latitude of the Cofre de Perote.

9. SOUTHEASTERN CENTRAL MESA

This is the heart of the Nahua area, including Tula, Teotihuacán, Tezcoco, Mexico, Tlaxcala, Cholula, Tehuacán, and Teotitlán—the center of Toltec and Aztec development. It is mainly tierra fria, constituting the high southeastern apex not only of the "Mesa Central" (maps 22, 23, pp. 198, 199 below), but of the whole of "Interior Mexico." The area is easier to recognize as a historic entity than to delimit. I have tentatively omitted most of Hidalgo as belonging rather with the Vera Cruz and Otomí-Guanajuato-Querétaro areas. Some of the nearer Mixtec should perhaps be counted in: the affiliations of this people seem doubtful as between the three areas which they adjoin.

[15] W. Krickeberg, Die Totonaken, Baessler-Archiv, 7:3, 55, 1918.

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system. It may be assumed that in content and level this culture was similar to that of Michoacán, though presumably one step farther removed in quality as well as distance from that of the Toltec-Aztec center. The pottery remains as a whole confirm this judgment, though they must as yet be used with caution: first, because of a simplifying inclination in some quarters to group everything west of Toluca into a single "tipo Tarasco"; and secondly, because the relative age of the various types is wholly unknown.

I assume that upland and lowland culture in this region will prove somewhat different, and therefore tentatively distinguish:

11. Jalisco Highland.

12. Jalisco Coast, west of the Cordillera, and including Colima and the southern low-lying portion of Nayarit (Tepic).

These two cultural areas divide much along the line which separates physiographic or "natural" regions of Mexico: the Volcanic Area from the Sierra del Sur of Thayer, and the Mesa Central from the Southern Escarpment of McBride.[19] (Maps 7, 22.)

The Rio Grande or Santiago debouches about through the center of Nayarit. About its mouth, and north, lay the district of Centispac. Next, on the Acaponeta, Sauer and Brand[20] reckon the province of Aztatlán, and this in turn was succeeded by Chametla, and then Culiacán in Sinaloa. Acaponeta still had pyramids, or at least mounds, and may therefore belong rather with the Jalisco than with the Sinaloa area. Until the Jalisco area is explored from the archaeological point of view and observational technique, this point must be left open.

Mendizábal, whose work, simplified in map 17, is discussed and cited below, recognizes a "reino de Colima,"[21] larger than Tarascan Michoacán and adjacent to it on the west, as distinct from the "pequeños estados" like Xalisco to its north. He also represents as nonagricultural the populations in the northeastern part of my Jalisco Highland area.

The modern population of the Jalisco Highland area is fairly dense (map 20). This may be the result of a particularly successful adaptation of Spanish colonial culture to the environment of the western Mesa Central. For instance, Jalisco produces 42 per cent of all the maize grown in Mexico,[22] and in part is a good wheat-growing country. If aboriginal, the population density of the Jalisco Highland would suggest a higher cultural level than the area is generally assumed to have possessed.

[19] W. N. Thayer, The Physiography of Mexico, 24:61–94, 1916; G. M. McBride, The Land Systems of Mexico, Am. Geogr. Soc., Research Ser., no. 12, 1923. Both are discussed below, in the section on Physiographic Areas.

[20] Aztatlán, UC–IA no. 1, 1932.

[21] The limits of this "kingdom" of Colima, roughly defined by Colima, Lake Chapala, Cape Corrientes (see also Orozco y Berra, 274), cut across the boundary which separates my Jalisco Highland and Jalisco Coast. If cultural unity can be attributed to this "kingdom," my two areas would probably be replaceable by a northern and a southern one: say Lower Santiago or Jalisco, and Colima.

[22] C. C. Colby, Source Book for the Economic Geogr. of North America, 1921, p. 333, quoting Finch and Baker, Geogr. of World's Agric., U. S. Dept. Agr., Off. Farm Management, 1917.

13. NORTHEASTERN CENTRAL MESA: GUANAJUATO-QUERÉTARO

These two states of the northeastern Mesa Central were the home of the Otomí, who held also much of Hidalgo. Some of the Otomí, with their linguistic relatives the Mazahua, were in the western part of the state of Mexico, between the Nahua of the Valley of Mexico and the Tarasco of Michoacán. The Otomí were looked upon as provincial boors by the Aztecs, and were evidently in some measure dependent on the Southeast Mesa Central and Vera Cruz Coast;[23] but their culture is too little known for its place to be made certain.[24] The region is subarid, mainly classifiable as grass or scrub, but not desert.

This is the fourth area recognized as on the Mesa Central:

Position in Mesa Central	*Area*	*Ethnic groups*
Southeastern	Southeastern Central Mesa	Toltec-Aztec Nahuan
Middle Southern	Michoacán	Tarasco
Western	Jalisco Highland	Nahuan (?)
Northeastern	Guanajuato-Querétaro	Otomí

The northern part of the Mesa Central seems to have been nonagricultural, and is here reckoned in the North Mexican Interior Plateau area of culture.[25]

NORTH MEXICAN AREAS

The half or more of Mexico which lies north of the Pánuco and Santiago rivers is probably the least known part of native North America, archaeologically, ethnologically, and linguistically. The old culture is long since gone, many of the languages are wholly extinct, the majority of ethnic groups are absorbed or practically dissolved, and archaeological exploration remains minimal.

Documentary Sources

I base my classification largely on a comparative ethnological study of northern Mexico by Ralph Beals.[26] It is a topical and areal compilation of the principal published documentary historical sources. The Beals study is supplemented by a recent map by Mendizábal,[27] (simplified in map 17), and by several archaeological and linguistic considerations.

The outstanding finding of the Beals survey is that at the time of Spanish exploration and settlement a large part of northern Mexico was nonagricultural—a much larger part than has been assumed, as for instance by Spinden and Wissler and those who have followed them. Beals classes the following groups as not farming: the Mexican Apache, Lipan (Toboso), Coahuiltec, northwestern Tamaulipec, Janambre, southern Concho, part of the Lagunero

[23] Thus A. Caso, in ICA 23 (1928, New York): 130–135, 1930, describes an Otomí day-sign calendar codex from Huichapán in Hidalgo.

[24] J. Soustelle, in La Famille Otomi-Pame, Trav. et Mém. de l'Instit. d'Ethnol., 26, 1937, has given an extremely valuable account, with many new data, of the languages, modern material culture, and historic relations of the Otomian family.

[25] Delimitations of the Mesa Central are given in maps 22, 23.

[26] The Comparative Ethnology of Northern Mexico before 1750, UC–IA no. 2, 1932.

[27] M. O. de Mendizábal, Influencia de la Sal en la Distribución Geográfica de los Grupos Indígenas de México, ICA 23 (1928, New York):93–100, 1930.

(Arriba), Guachichil, Zacatec, eastern Tarahumar, probably the P... haps part of the Tepehuán, and apparently local fractions of other ... as the Pima and Otomí. In more summary terms, an immense area ... comprising nearly all of the interior drainage basins of the northern ... and much surrounding territory—roughly the whole area between the ... Madre Occidental and Sierra Madre Oriental—agreed with the United ... plains and western and southern Texas in being nonagricultural ... times.

The areal classification of Beals is as follows:

Jalisco-Tepic
Culiacán-Tepic, from the Mocorito south
Old Sinaloa, the Cáhita area, from the lower Sinaloa to the lower Yaqui
Old Sonora, from the Yaqui north, Pima and Opata
Southern Sierra, probably subdivisible into: a, Huichol, Cora, Tepecano, Zacat...
Acaxee, Tepehuán
Northern Sierra, Tarahumar
Central Agriculturists, Concho of Conchos River and Lagunero of Nazas River and P...
Lake—two separate tracts
Tamaulipas, the southeastern Tamaulipec
Nomads, the nonfarming tribes as just listed

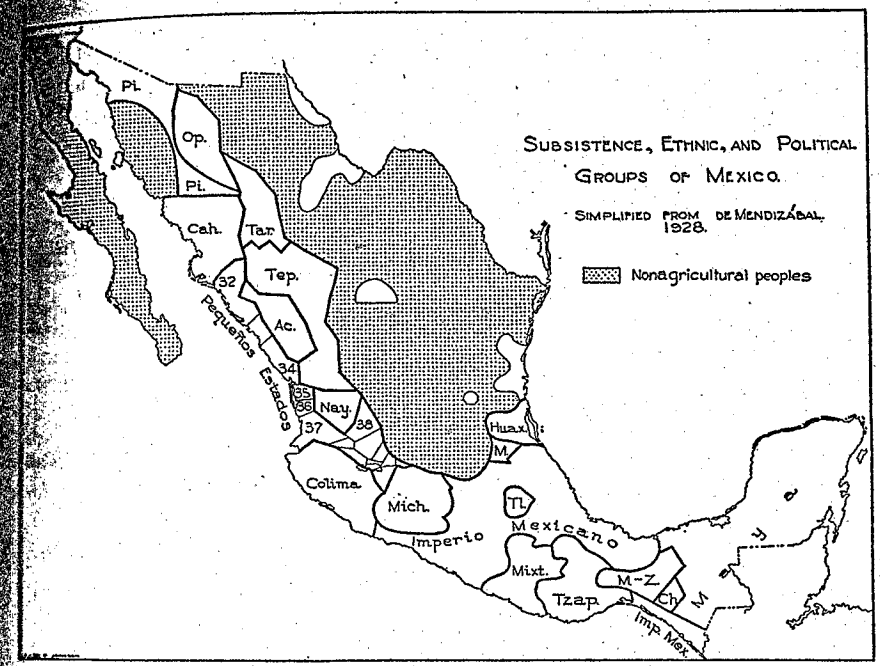
He gauges the relations of these groups by the degree to which they part... of "South Mexican," that is, Aztec, culture. Of 78 South Mexican trait... lected because they occur also among at least two North Mexican group... Jalisco-Tepic has or probably had 56; Culiacán-Tepic, 43; Old Sinaloa, 38... Old Sonora, 40; the Southern Sierra, 55; the Northern Sierra, 25; the Nom... 17; the Central Agriculturists (mainly in the northern part of the Nom... area), 17; Tamaulipas, 22; the Southwestern United States, 42; the South... eastern United States, 33.

Several considerations must be borne in mind in regard to this computation... First, the data are unequal in fullness. That the American Southwest shows... more than twice as many South Mexican traits as the Central Agriculturists... in spite of greater distance, is surely due partly to more complete information... though it is also probable that the richer culture of the Southwest received... and retained more elements of southern origin than did the meager culture of... the Concho and Lagunero. Second, in the frequent scantiness of data, traits... occurring among one population of an area have apparently had to be counted... for the area as a whole. This gives the figures less accuracy than if the computa... tion could have been made on a tribal basis. Third, and allied to the last, is the... fact that the areas to which the statistics apply represent subjective groupings... This is no different, except in degree, from the culture areas of other authors... in other regions, but must be taken into account. Lastly, the figures indicate... only the relative, not the absolute, degree of similarity to Aztec culture, ele... ments of the latter which have not been reported in the north, like the calendar... system for instance, not being included. Thus the figures, Southern Mexico... 78, Jalisco-Tepic 56, Old Sinaloa 38, do not mean that Jaliscan culture con... tained seven-tenths of Aztec culture; but they do suggest that nearly twice...

...many traits of the high southern culture extended into Jalisco as to the ...

...ther all needful reservations, however, the data collected and computed ...Beals allow of considerable insight into cultural conditions in this obscure ...gion.

The study by Mendizábal is a more special one, devoted to the importance ...lt in native Mexico. But he uses as his basis a map showing the indigenous



Map 17. Subsistence, Ethnic, and Political Groups of Native Mexico; simplified from Mendizábal. Of particular interest is the large nonagricultural area in the northeast, contrasted with the continuous "corridor" of farming peoples on the Pacific coast and in the Sierra Madre leading to the agricultural area of the American Southwest. Note also the political or near-political organization of society up the Pacific coast as far as northern Sinaloa.

ABBREVIATIONS

Pi.	Pima	32	Culiacán	Huax.	Huaxtecapán
Op.	Opata	34	Chiametla	M.	Meztitlán
Cah.	Cáhita	35	Acaponeta	Tl.	Tlaxcalán, Cholulán, Huexotzinco
Tar.	Tarahumar	36	Centispac		
Tep.	Tepehuán	37	Xalisco	Mixt.	Mixtecapán
Ac.	Acaxee-Xixime, etc.	38	Cazcan	Tzap.	Tzapotecapán
Nay.	Cora, Huichol, Tepecano, Colotlán	Mich.	Michoacán	M-Z.	Mixe-Zoque
				Ch.	Chiapanec

modes of life and subsistence régimes. Although schematic in some of its lines, this map is valuable in several respects, and I have therefore appended a somewhat simplified reproduction of it (map 17). In this I have shaded the area given by Mendizábal as nonagricultural. It will be seen that the nonfarming area coincides quite closely with that of Beals—in fact, extends a little farther south onto the Mesa Central among the Otomí. As these two students worked quite independently, their corroborative findings can be accepted as

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superseding the older maps of Spinden and Wissler which assumed no... interior Mexico as agricultural. Other interpretations embodied in the... dizábal map are referred to in the discussion of the several areas.

Archaeology

The outstanding archaeological facts are of different order for the inter... coast. In the interior, groups of notable ruins are known from three a... the eastern or inner slopes or foot of the Sierra Madre. All three of... groups of structures seem to have been abandoned before Spanish disco... and all of them were in or near territory held by nonagricultural tribes... recession of culture had thus evidently occurred along the western edge... the interior basin. Also, this strip is indicated as one possibly important... ridor of culture flow between central Mexico and the American South...

The three areas of ruins are:

1. In or about western Zacatecas: La Quemada, Totoate, Chalchihuites. These re... Spinden's "Northwest Frontier" of higher Mexican culture. He suggests that they re... a late Toltecan culture horizon and flourished after 1000 A.D.[28] There are pyramids, ma... columns, tripod and cloisonné pottery.

2. In Durango, at Zape and Sestin. Pyramidal mounds or terraces and masonry... the pottery is undescribed.[29]

3. In Chihuahua, about Casas Grandes.[30] This is generally accepted as a local form... Pueblo culture, whose pottery affiliates both stylistically and temporally with Middle... polychrome ware. The adobe structures, although little explored, are obviously of... type. There seem to be no pyramids. A poor form of the ware, Amsden's "peripheral C... Grandes," extended westward across the Sierra Madre at least as far as the Bavispe bra... of the Yaqui River, in the heart of the historic Opata territory.[31]

It is clear that of these three archaeological groups the southern one in... Zacatecas affiliates with central Mexico, the northern one in Chihuahua wi... the Pueblos. The middle one in Durango is doubtful, though southern conne... tion is suggested.[32]

The Sierra Madre region proper is almost without reported archaeologica... remains, as are the eastern part of the north-central plateau and the Sierra... Madre Oriental.

On the Atlantic coast, information becomes very thin as soon as the Totana... and Huastec habitats in the northern part of the Vera Cruz area are left be... hind, that is, as soon as cultural North Mexico is entered.

For the west coast, there are explorations by Sauer and Brand[33] and excav...

[28] Ancient Civilizations of Mexico and C. A., 169, 1922. Lehmann, Die Sprachen Zentral-Amerikas, 1920, map, legend, also refers to connections with Teotihuacán. Hrdlička, AA 5:385–440, 1903, adds also, in Bolaños Valley in Jalisco: Mesitas near Nostic and Totoate; Banco de las Casas, Mesa del Encanto, Cerro de Colotlán, etc.; in Tlaltenango Valley in Zacatecas: Teul, etc.; in Juchipila Valley in Zacatecas: Las Ventanas, Pueblo Viejo, etc. The firsthand reports are by Gamio, Anales Museo Nacional, 2, 1910, and Noguera, Pub. Secr. Educ. Pública, 1930.

[29] E. Guillemin Tarayre, Arch. Comm. Sci. du Mexique (ser. 3), 3:183–185, 1869.

[30] H. A. Carey, AA 33:325–374, 1931; A. V. Kidder, Holmes Anniv. Vol., 253–268, 1916; and Southwestern Arch., 115–118, 1924. Also D. D. Brand, AA 37:287–305, 1935.

[31] Southwest Museum Papers, no. 1, 1928.

[32] J. A. Mason, Late Archaeological Sites from Chalchihuites to Zape, in 25th Anniv. Studies, Phila. Anthr. Soc., 127–146, 1937. Mason finds the Zape culture meager.

[33] C. O. Sauer and D. D. Brand, Aztatlán, UC–IA no. 1, 1932.

...by Isabel Kelly. The most northerly pyramidal mounds seem to be in the ...meta Valley, in northern Nayarit. Sinaloa and Sonora are wholly without pyramids, though they have some low earth mounds; and do not appear to have built in either stone or adobe masonry. In Sinaloa as far north as the Mocorito, various local red-on-buff, polychrome, incised, and other pottery wares occur. Overlapping sequences of these have been determined for Chametla and Culiacán by Kelly.[34] The pottery is wholly lacking in Pueblo resemblances. It also shows no specific resemblances to Valley of Mexico or "Tarascan" types. Its affinities may lie southward along the west coast; but this is a pure guess, because the coastal wares from Nayarit to Oaxaca are unknown. Sinaloan stone axes and metates are respectively three-quarter grooved and unlegged. This fact must not be overstressed as a specific Pueblo resemblance, since the same types of ax and metate prevail through the Gila, Sonora, Chihuahua, Durango, and Zacatecas regions.[35] So far we are in the coast plain of southern and central Sinaloa, in territory of non-Nahua Uto-Aztecan groups whom Sauer designates as Totorame and Tahue.[36]

Beyond the Mocorito, and beginning with the Sinaloa (Petatlán) River, with entry into Cáhita and continuing through Pima and Opata territory, the prehistoric culture is replaced by a simpler one. Pottery no longer contains even occasional tripods, nor is it generally painted or decorated. Archaeological remains are unusually meager. This lower-level culture prevails through northern Sinaloa and nearly all Sonora[37] except the northeast corner of the state.

The west coast thus seems excluded, unless archaeological discoveries of a wholly new type are made there in future, from having been one of the corridors along which specific Central Mexican culture flowed in serious quantity to the Hohokam and Pueblos; although at an earlier time agriculture might have worked north along this coast.

[34] Excavations at Chametla, Sinaloa, UC–IA no. 14, 1938. Her Culiacán report is in press.

[35] Cf. Seler, Gesamm. Abhandlungen, 3:545–559, 1908, for grooved axes at La Quemada in Zacatecas. The type of metate there seems undescribed, but for the other regions it is established as a slab without legs. In other words, the tripod metate appears to have had little if any occurrence north of the Mesa Central or the higher Mexican culture.

[36] This and the following paragraph are of 1936.

[37] The basic paper for northern Sonora is by Sauer and Brand, Prehistoric Settlements of Sonora, with Special Reference to Cerros de Trincheras, UC–PG 5:67–148, 1931, a valuable complement to their Aztatlán, UC–IA no. 1, 1932, for Sinaloa. Brand has summarized and compared some of the findings in The Distribution of Pottery Types in Northwestern Mexico, AA 37:287–305, 1935. In the Magdalena-Altar drainage occur the terraced Trincheras habitations. With these is associated a purple-on-red Trincheras pottery ware, which has been found north to Nogales, south not quite to Hermosillo, east to include the San Miguel branch of the Sonora. In the center of the area, around Altar, occurs Trincheras polychrome. The Trincheras type appears to be contemporary with the Casas Grandes polychrome pottery of Chihuahua. Between the two, on the upper Sonora and Moctezuma, occurs a coarse, unpainted, little known "Rio Sonora" ware. Gila red-on-buff pottery (Hohokam) has a distribution almost exactly exclusive of Trincheras on the north. East of the latter it occurs some 60 miles south of the American boundary, to Arispe and Fronteras; 100 miles still farther south, at Sahuaripa, red-on-buff sherds have been found which Brand and Sauer tentatively ally to Hohokam red-on-buff, but which seem to me convergent rather than related. All the wares mentioned occur west of 107° and north of 29°. Central-South Mexican pottery ends at 25° on the west coast. Between 25° and 29°, in the Cáhita-Tarahumar-Northern Tepehuán area, neither painted pottery nor stone or adobe structures have been reported.

Language[38]

In speech, northern Mexico is predominantly Uto-Aztecan. Members of this family held all the Sierra Madre and most of the interior plateau and coast regions. Non-Uto-Aztecan languages characterize the eastern part of the area: Pame, Janambre, Olive, Tamaulipec, Coahuiltec. None of these is well known and some are unknown and probably extinct. The other non-Uto-Aztecan languages are those of certain Apache and Lipan divisions on the United States frontier, the Seri along part of the coast of Sonora, and Yuman (and other?) idioms of peninsular California.

Of the Uto-Aztecan languages the eastern ones, Concho, Lagunero, Zacatec, Guachichil, Acaxee, Xixime, and Teul-Cazcan, are gone and practically unknown. The others belong mainly to the "Sonoran" division (Powell's "Piman family"), but some to the Nahuan; the Shoshonean division is unrepresented in Mexico.

Nahua or "Mexicano" speech is carried by Orozco y Berra, and Thomas-Swanton, through Jalisco and up the length of Sinaloa to the Sinaloa River and in an angle up this stream. This speech is not yet quite extinct in certain spots in Sinaloa;[39] but it was imported by the Spaniards: colonies of Tlaxcalans. Sauer has shown conclusively[40] that nowhere in Sinaloa was Nahua or Nahua dialect the native language. He has also therewith raised the question of how far the same condition applied to Jalisco and environs. The presence of Aztec place names proves very little, because these were introduced by the Nahua allies, interpreters, and followers of the Spaniards; as in Mayan Guatemala. On the other hand, a prevalence of non-Nahua place names, or even a heavy minority of them, is fair indication that the pre-Conquest native speech of an area was not Nahua. On this basis, the whole of Sinaloa was non-Nahua though no doubt Uto-Aztecan. In fact, the error of Orozco y Berra seems to have been to force early statements that such-and-such language was "corrupt Mexicano" or "barbarous Aztec" into its construal as Nahua, whereas probably nothing more was intended than a statement of similarity or relationship—in modern terms, being Uto-Aztecan.

At any rate, it now seems established that north of the Santiago no Nahua was known before the Spanish conquest and that all the Uto-Aztecan languages were "Sonoran," to fall back on Buschmann's and Brinton's old term, that is, non-Nahua and non-Shoshonean. But Sonoran in turn appears to denote no true speech entity: it is only geographically descriptive, and inaccurate at that, since it covers Chihuahua, Durango, Sinaloa, Nayarit, etc., also.

The non-Shoshonean, non-Nahua Uto-Aztecan languages fall into at least

[38] These eight paragraphs on northwestern Mexican languages were rewritten in 1936.

[39] Kroeber, Uto-Aztecan Languages of Mexico, UC–IA no. 8:2, 18, 1934.

[40] The Distribution of Aboriginal Tribes and Languages in Northwestern Mexico, UC–IA no. 5, 1934. This study is basic for ethnic determinations in the area, as the same author's Aztatlán (with Brand, UC–IA no. 1, 1932) and Aboriginal Population of Northwestern Mexico (UC–IA no. 10, 1935) are for archaeology and population. The whole picture of tribal identities, territories, and relationships is changed from the familiar Orozco y Berra and Thomas-Swanton line-up. Sauer's large-scale map should be used throughout to correct the northwestern Mexican part of my map 1.

...groups: Pima-Tepehuán; Cáhita-Opata-Tarahumar; Cora-Huichol. Of these, Pima-Tepehuán is much the most differentiated. There is some warrant for opposing it to all other Uto-Aztecan–"Sonoran," Nahuan, Shoshonean combined.[41] The Pima-Tepehuán distribution is peculiar: a belt or ribbon from the Gila to the Santiago, eight hundred miles in an air line, with a single interruption of a tenth that distance around the upper Fuerte; never touching the sea except in the desert of the Papaguería, yet lying on the west of the Sierra Madre north of the brief break, and on its east flank to the south; altogether a unique distribution in North America.[42] The component languages, which are closely similar, are Papago, Pima Alto and Bajo, Tepehuán, Tepecano.

The Cáhita-Opata-Tarahumar group includes, besides these three languages and their dialects, Concho, far in the interior; Huarejía or Varohío on the Mayo; and others, known only by name or ethnically, as far south probably as the Tahue on the coast and the Acaxee and Xixime of the Sierra in Sinaloa; that is, to about latitude 23°.[43]

The Cora-Huichol group lies, on the whole, south of the two foregoing. With Cora there was probably allied Totorame or Pinome (Nahua for "barbarian") of the coast; with Huichol, neighboring Tecual, and Guachichil well to the east in San Luis Potosí. Cora has been suspected of leaning somewhat toward Pima-Tepehuán; Huichol, toward Nahua; the unity of the group seems somewhat uncertain.[44]

From latitude 28° in the interior plateau not far south of the Rio Grande to latitude 18° on the Pacific coast there was a long stretch of languages generally classed as Uto-Aztecan on the strength of statements by conquerors and missionaries, but without any preserved speech material. These include Lagunero, Zacatec, Teul, Cazcan, and the "Mexicano" of Jalisco and Colima.

Areas

The foregoing findings in connection with the general data available suggest the following culture areas in northern Mexico, asterisks designating those already reviewed in connection with United States areas.

14. South Sinaloa, or Aztatlán-Culiacán: Presumably Uto-Aztecan, but precise affiliations uncertain.

* Fuerte-Yaqui Lowland (area C3): Cáhita. Beals's Old Sinaloa.

* Sonora Coast (area C6): Serian tribes.

* Sonora, except so far as included in last (area C4): Pima, Opata. Beals's Old Sonora.

[41] UC–IA no. 8, 1934, p. 6. Recognized by J. A. Mason, Tepecano, Ann. N. Y. Acad. Sci., 25:309–416, 1917; confirmed by B. L. Whorf, The Comparative Linguistics of Uto-Aztecan, AA 37:600–608, 1935 (a fundamental outline).

[42] Maps in UC–IA no. 5:1, and UC–IA no. 8:28.

[43] Fuller review of Sonoran as a whole in UC–IA no. 8; and, independently by J. A. Mason, Classification of Sonoran Languages, pp. 183–196 of Essays in Anthr., UC, 1936; the latter with an appendix by Whorf, in which he suggests "Taracahitian" for the cumbersome Cáhita-Opata-Tarahumar. Both Mason and I believe this group to be on the whole the nearest to original Uto-Aztecan.

[44] Closer relation of Cora and Tepehuán-Pima is asserted in old Spanish statements, and reflected in Orozco, p. 39, and Sauer, UC–IA no. 5:82. Whorf, in AA as just cited, sees no ground for my doubting (UC–IA no. 8:9) that Cora and Huichol form a true group or my suspecting that Huichol leans toward Nahua; nor does Mason.

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The South Sinaloa area is relatively uniform in physiography and vegetation, though many of its features also extend farther north and perhaps south. The climate passes gradually from savanna in the south to steppe type in the north. The plant cover is a thorny, deciduous, scrub forest with cardón and pitahaya cactus admixture, known as monte, adapted to dry winters and hot, fairly rainy summers.[49] The range of elevation is not great enough to cause serious local variation in this type of vegetation. The most prosperous settlements were on the lower courses of the larger of the fair-sized rivers, whose course is transverse to the coast; or in the south on the drowned lagoons.

Much of the vegetation continues northward into Sonora, but, on account of greater aridity, only at higher levels there, the more coastward belts being covered first with a mesquite-and-grass association and then with succulent desert type vegetation. In the Cáhita area, the Fuerte, Mayo, and Yaqui rivers are larger than those of Sinaloa, and their bottom lands afforded the characteristic habitat of the area at least as much as in Sinaloa. At any rate, the Cáhita were definite lowlanders, whereas the Sinaloans lived up into the hills, though their settlements, too, tended to cling to the watercourses.

15. SIERRA DEL NAYARIT: SOUTHERN SIERRA MADRE

In the region of the Sierra del Nayarit, where the states of Nayarit, Jalisco, and Zacatecas adjoin, three tribes have maintained enough of their ancient culture to have made successful ethnological studies possible: of the Huichol by Lumholtz and Zingg, the Cora by Preuss, the Tepecano by Mason and Hrdlička. This is the only even semiaboriginal ethnology of moment secured in modern times between the Tarahumar and the Lacandón. It is therefore easy to overrate the importance of these three mountain tribes in the aboriginal scheme of culture.

The Huichol, Cora, Tepecano, and Teul or Cazcan are here united in a group, the last two with some hesitation. The culture is the fundamental Mexican one in simple form. It is not Southwestern: specific or characteristic Pueblo traits are rare in it; Aztec ones are recognizable.

The peoples assumed to form this culture group belong to quite different branches of Uto-Aztecan, and therefore have had separate ethnic histories at some time in the past. The Tepecano, as Mason has shown, belong to the Pima-Tepehuán division of Uto-Aztecan speech. The Cora seem to lean rather to this than to the Cáhita-Opata-Tarahumar-Concho division, but are generally united with Huichol to form a third group. The place of the Teul language is unknown.[50]

The region is mountainous, running the usual gamut from hot-canyon dry-winter vegetation to pines along the summits.

[49] Harshberger includes most of Sinaloa in his Sonoran Desert region (4a, map 2), within which he recognizes a "Yuman" and a "Sinaloan" district. The latter he extends south "almost to latitude 25°," though his map puts the southern boundary against the Jaliscan region (30c) somewhat north of 26°.
Sauer and Brand's Aztatlán, UC–IA no. 1, 1932, reviews all geographical aspects of the area.

[50] If teul = teotl, the speech may have been of Nahua type. But Orozco y Berra, 279, unites it with Tepecano; which Mason, Tepecano, 312, seems to accept.

15. Sierra del Nayarit, or Southern Sierra Madre: Cora, Huichol, perhaps Tepe... Teul (Cazcan). Part of Beals's Southern Sierra.
16. Central Sierra Madre: Acaxee, Xixime, Tepehuán. Part of Beals's Southern S...
* Northern Sierra Madre (area C5): Tarahumar.
17. North Mexican Interior Plateau: Zacatec, Guachichil, Pame, Janambre, ... Concho, perhaps the Athabascan "Toboso." Beals's Nomads and Central Agricultur...
18. Tamaulipas: Tamaulipec, Olive, Coahuiltec. With South Texas area (E3), ... larger Northwest Gulf Coast area.

14. SOUTH SINALOA: AZTATLAN-CULIACAN

Sinaloa north to include the Mocorito, with the northern coastal part of N... rit about as far south as the mouth of the Rio Grande (Santiago), forms a ... marked Uto-Aztecan-speaking cultural unit, with a substantially uni... archaeology. Sauer has shown[45] that speech was almost certainly "Sono... and not Nahua in type. Also, according to him, both documentary source... prehistoric remains suggest a minor cleavage at the Piaxtla, but this see... secondary significance. The districts of Aztatlán (Centispac, Chametla) ... Culiacán seem to have been the ones of most importance, respectively ... and north of the Piaxtla, in the opinion of the early Spaniards and accor... to the abundance of remains. The Piaxtla Valley itself was less populous ... marked a change of subculture and speech.[46] The culture of the whole area ... marginal Mexican, not Southwestern. The pottery is of generic south or cent... Mexican rather than Gila or Pueblo type. Metal, though extremely sc... in the archaeological remains, is mentioned in the first historic records. ... northern boundary of this area therefore marks the frontier between cultu... Mexico and the larger Southwest.

Beyond this frontier, from the Sinaloa to the Fuerte, the maps show a "... ter belt" of small groups adjacent to the Cáhita. Of almost none of these ... speech specimens seem to have been recorded. It is a question, therefore, ... how historical references to their distinctness, or that of their speakers, should ... be interpreted. They may all have been Cáhita dialects. Sauer discusses the ... relevant but partly indirect evidence,[47] which will have to be sifted pre... closely before a decisive conclusion can be reached.

Mendizábal[48] (map 17) distinguishes between an area of "pequeños estados" ... stretching from Lake Chapala and the Tarascan frontier north to include the ... province of Culiacán, and an area to the north and east thereof inhabited by ... "grupos prepolíticos." These last are, beyond Culiacán, numerous small tribes ... possibly all of Cáhita affiliation; and, on the interior side, the Acaxee group ... and the Tepehuán. The northern frontier of Culiacán seems to be put at the ... Sinaloa. The "small states" are, in order southward along the coast, Culiacán, ... Cosalá (partly equivalent to Sauer's Tacuichamona), Chiametla, Acaponeta, ... Centispac, Xalisco, and thence others inland. Of those named, Xalisco falls ... into my Jalisco Lowland area; the others equate with the present one.

[45] UC–IA no. 5, as cited.

[46] Aztatlán, UC–IA no. 1. In UC–IA no. 5 the northern subarea is assigned to the Tara... of Cáhita-Opata-Tarahumar affinities; the southern to the Pinome or Totorame, who spe... Cora.

[47] UC–IA no. 5. [48] As cited above, note 27, p. 119.

The Chalchihuites-La Quemada archaeological zone of ruins lies on the ... region as it has been delimited on the basis of ethnolinguistic mapping ... only just outside, in the adjacent parts of Zacatec territory.[51] It is possible ... the western Zacatec should be reckoned in the present area, rather than ... the non- or subagricultural interior plateau.[52] Or, an old intensively ... culture of larger area may have shrunk into the historic Nayarit area ... the ruins outside its boundary.

16. CENTRAL SIERRA MADRE

This is the country looking down on the Sinaloa area on one side and ... interior plateau on the other: roughly, western Durango. It is rugged ... much of it is in the pines. It was rather thinly populated by divisions ... Acaxee and Xixime groups, poor mountaineers and fierce cannibals in ... warfare with each other as well as with their neighbors, and long since ex... With them, probably, are to be reckoned the Tepehuán, whose territory ... surrounds that of the Acaxee on the interior side.

Beals's "Southern Sierra" area includes this as well as the preceding ... The Zape ruins lie near the old boundary between Acaxee and Tepehu... but suggest a once more prosperous population than either of these two ... toric groups.

According to my classification, the boundary between the Central ... Northern Sierra areas, or between Tepehuán and Tarahumar, would also ... mark the Mexican and Southwestern spheres. This may seem artificial, ... in a measure no doubt is so. But the Tepehuán and timid Tarahumar differ ... in disposition, and spoke Sonoran languages of different divisions. Beals ... finds definite cultural distinctness, including a notably smaller Mexican ... ment in the northern area.

17. NORTH MEXICAN INTERIOR PLATEAU

This is a large tract, roughly coinciding with the north-central interior ... desert-plateau physiographic area (maps 7, 22, 23), and extending from ... Otomí, Jalisco Highland, and Sierra del Nayarit cultural areas on the south ... the Rio Grande on the north. It centers in the largest and middle one of the ... three great Mexican land-locked drainages, the Mapimí-Parras Basin. It ... cludes also the extensive drainage of the Conchos, a Rio Grande affluent, ... and parts of the upper drainages of the Santiago (Río Grande del Sur) and ...

[51] Sauer, Tribes and Languages, UC–IA no. 5:55, 1934, cites an early seventeenth-century ... document as listing Chalchihuites as just within the Tepehuán frontier against the Zacatec...

[52] There would be the more reason for this if the Guachichil, farther east in San Luis Po... tosí, were Huichol; in fact, the culture provinces of this part of Mexico might then have to ... be reconstituted. The evidences are three: 1, similarity of the names Huichol and Guachi... chil; 2, Spanish statements or conjectures (cf. Sauer, Tribes and Languages, 7, 81), mostly ... not very decisive; 3, the fact that the modern Huichol make a long ceremonial pilgrimage ... into San Luis Potosí to obtain peyote. Perhaps we are dealing with two related peoples rather ... than one. One brief Guachichil vocabulary would prove more than all the half-evidence in ... hand. The uncertainty is typical of most ethnological problems of fact in those areas of ... Mexico in which local culture and speech have disappeared. It should serve as a reminder ... of how tentative all classifications here advanced really are.

[53] Beals has compiled from the earlier sources a coherent ethnological picture of Acaxee ... culture in UC–IA no. 6, 1933.

... It is an intermountain plateau averaging 3000 feet lower in the north ... in the south; subarid to desert in climate. Shelford, for instance (map 3), ... the vegetation as grassland, small-tree semidesert, succulent desert, ... extreme desert, with, on the whole, increasingly arid types toward the ... Sanders (map 5) labels the plant cover mesquite-cactus scrub, except ... short-grass areas on the lower Conchos and Nazas, and desert to the west of ... The area is similar to the Pueblo Southwest in being an intermountain ... of low precipitation.[54] But it lies lower and extends into the tropics.

Culturally this area is a provisional one. It seems too large, especially too ... from the south to north, to have formed a true unit. The difficulty is that ... the included peoples are too little known to make any present scheme of ... division satisfactory. Beals distinguishes two groups of "Central Agriculturists" on the Nazas and Conchos from the remainder of his "Northern Interior Plateau." It seems somewhat questionable whether presence and absence of agriculture is properly construable as the basic criterion of culture ... savages in this area. Apparently only some of the Lagunero and Concho are ... question as farming. Even if these two groups occupied all the territory ... signed to them on the map, they would have been able to farm only small ... fractions of it, unless they were unusually skillful and addicted agriculturists. It is likely that the situation was as among the Yuman tribes of northwestern Arizona, and again as among the western Apache, where all divisions were willing to farm but only some were able to do so, and yet the culture as a whole, apart from the agriculture, was rather thoroughly uniform. So, on the northern Mexican plateau, the primary cultural unity and its segregations may well have been on the basis of factors other than agriculture or its absence. It is therefore possible that fuller knowledge may not only split up this area, but also may link certain parts of it primarily with other areas.

Thus the western part of the state of Zacatecas, from La Quemada to Chalchihuites, at the time these ruins were inhabited, must have harbored several fairly successful concentrations of population practicing intensive farming, with their cultural affiliations perhaps much stronger to the south than with most of the tribes in the northern plateau.

In the southeast, the Pame have been included in the area essentially on guess.

[54] According to a preliminary rainfall map by Huntington in Geogr. Rev., 11:255, 1921, the towns of Durango, Zacatecas, Aguas Calientes, Guanajuato, Querétaro, with a precipitation of about 20 inches, may be taken as marking the western edge of the dry interior. Nogales, Chihuahua, San Luis Potosí, Pachuca, Saltillo (but not Monterrey), and Nuevo Laredo have a precipitation of less than 20 inches. The area with less than 10 inches of rainfall is enclosed by a line crossing the Rio Grande near the mouth of the Pecos and more or less following longitude 102° to about 24° or 25° latitude, where it turns northwestward to reënter the United States around 108°. This low-precipitation area roughly coincides with western Coahuila and eastern Chihuahua. It also is about coextensive with Sanders' and Shelford's desert vegetation areas; the tribes within it were parts of the Conchos and Laguneros (who farmed so far as they lived in the "grasslands" along the streams) and the Athabascan Toboso (Lipan Apache ?). Nearly all the area with rainfall of less than 20 inches was nonagricultural; and so was a better-watered stretch (precipitation up to 40 or 50 inches) in the region of the ill-defined "Sierra Madre Oriental" (Eastern Escarpment) in Tamaulipas and Nuevo León. Evidently, cultural associations had as much influence as rainfall in determining whether or not a given locality farmed—much as in southern Texas.

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In the north, it is unlikely that the North Mexican Plateau culture had ... boundary at the actual Rio Grande.

On the northeast, however, part of the territory of the Coahuiltecan-spea... ing tribes should perhaps have been added to the area. My Northwest G... Coast area, following the linguistic map, bows inland too far here, so as ... include Nuevo León and part of Coahuila. A physiographic demarcati... nearer the coast is suggested: probably along the line of the escarpme... ("Sierra Madre Oriental") separating the plateau from the coast plain.

18. TAMAULIPAS: NORTHWEST GULF COAST

Near Tampico at the mouth of the Pánuco, or a little to the north, climate, vegetation, speech, and culture change on the Gulf coast.[55] The plant cover of Tamaulipas is variously classed: as divided between short grass and scrub-... small-tree semidesert; and as "Gulf Mexican" (maps 2, 3, 5). Mayan Huaste... is replaced by almost unknown languages labeled Olive, Tamaulipec, Coahuil... tec. Stone or lime-concrete pyramids are said no longer to appear. The general culture was conspicuously backward as compared with south of the Pánuco, close to South Texan in level and probably in content. These two areas seem to constitute essentially one major area, for which Northwest Gulf Coast would be an appropriate name.

To be sure, it is certain that culture was not uniform, and probably not even substantially uniform, from the Pánuco to the Mississippi. The stretch is too long; the affiliations at the two ends—with Huastec and Natchez—too diverse. The difficulty is in drawing divisions when all the cultures in the stretch are so little known. The most important boundary probably did not fall at the Rio Grande: both because native culture frontiers in America rarely follow streams, and because the Coahuiltec speech unit sat astride this river. Provisionally, I therefore include the Coahuiltec in the Tamaulipas area, thus counting the southern tip of Texas as part of cultural Mexico.[56]

If we refuse to regard the Rio Grande as a frontier, the same should hold for the Pánuco. It is improbable that semicivilized Huastec looked across this river upon savages on the northern bank. Ruins in fact extend at least into southernmost Tamaulipas, and Beals and Mendizábal both rate the southeastern part of the state as agricultural.

The interior line has been left following the boundary which the maps assign to Coahuiltecan speech, but, as already mentioned in the last section, this may be too far inland for the culture frontier.

[55] The rainfall, according to Huntington, as cited, exceeds 70 inches on the coast in latitude 20°, exceeds 50 in 22°, is less than 30 in 24°. Sanders, map 5, has "jungle" vegetation, backed by deciduous forest, along the coast to the Pánuco; thence to the Rio Grande, a narrowing belt of grassland with mesquite scrub inland.

[56] J. A. Mason, in "Teocentli" (privately circulated), says that the prehistoric pottery of the coast between Rockport (28°) and Brownsville (26°) shows Huaxtec traits; and that on the Tamaulipas coast as far south as Soto la Marina (24°) he found Huaxtec objects, probably trade pieces, but no ruins.

See also E. B. Sayles, An Archaeological Survey of Texas, Medallion Papers, no. 17, 1935, with references to papers by A. E. Anderson, G. C. Martin, and W. H. Potter in Bulls. 1–4 of Tex. Arch. and Pal. Soc. of Abilene.

XI. POPULATION[1]

A POSTHUMOUS WORK by James Mooney[2] makes available the first careful and complete tribe-by-tribe series of estimates of the native population of America, north of present-day Mexico, for the period of early contact of each group with settling Caucasians. This invaluable study makes possible the examination of population density in terms of cultural or other areas, as indicated in the analyses attempted in the present section.

The Mooney figures are here used with one consistent modification—a substitution of my total of 133,000 for California[3] in place of C. H. Merriam's[4] 260,000 which Mooney took over; hence with a reduction of the total for the continent north of Mexico from 1,152,950 to 1,025,950, or about 10 per cent. I have made this substitution not because I wish to give my figure precedence over Merriam's, but because my total is arrived at through a tribe-by-tribe addition or "dead-reckoning" method, like all Mooney's other figures; whereas Merriam uses a mission to nonmission area multiplication ratio for the state as a whole.[5]

I have converted Mooney's data for tribes and bands into terms of my own ethnic groups as defined in map 1. For instance, his Massachuset, Wampanoag, Nauset, Nantucket, Martha's Vineyard, Narraganset and eastern Niantic, with populations of 3000, 2400, 1200, 1500, 1500, 4000, are listed simply as Massachuset, 13,600. Sometimes he gives only combined figures for tribes which I keep separate; thus, (Southern) Paiute and Paviotso. Accordingly there are overlaps as well as omissions; and an exactly authentic check-up on the conversion from his scheme is difficult. The result is that my totals fall about 10,000 below his.[6] This is an error of 1 per cent. But since the best of Mooney's estimates can hardly pretend to be nearer than by 10 per cent to the probable truth, and some may be 50 per cent or more from it, my discrepancy can be allowed as of negligible significance. It is of still less moment so far as it enters into population densities, because the exact area of many tribal territories is as imperfectly known as the numbers of their inhabitants.

All the following data and discussions, in short, are necessarily approximate and preliminary. What is needed is, first, a generally accepted classification of tribes or ethnic groups; second, a more precise determination of their territories; and third, a new series of estimates, both by local specialists and by

[1] A reduction of this section on population has been printed in AA 36:1–25, 1934. A review of pertinent literature which has appeared since 1931 is given at the end of the section.

[2] The Aboriginal Population of America North of Mexico, SI–MC 80, no. 7 (publ. 2955), 1928; edited by J. R. Swanton. This is a brief version of a contemplated large monograph, for which Mooney had studies under way before 1908, but of which by his death in 1921 he had completed only the section dealing with the Indians of the states from Maine to Pennsylvania. The brief article, "Population," in the Handbook of American Indians contains only totals by countries.

[3] BAE–B 78:880–891, 1925.

[4] The Indian Population of California, AA 7:594–606, 1905.

[5] Mooney apparently had not himself worked at the data for California, and therefore took over Merriam's result in block, with the result that this is his one area without figures for separate tribes or groups. My computation appeared after his work was done.

[6] Mooney, corrected for California, 1,025,950; aggregate totals in my analyses below, 1,000,880; plus 15,000 Coahuiltec not counted in, 1,015,880; difference, 10,070.

those interested in demographic problems as such, of the size of tribal pop... tions. These studies will probably involve a number of workers and a num... of years. Only then can anything like reasonable reliability in detail be ex... pected.

The areas in the lists that follow were calculated by planimeter on the or... nal draft of map 1. The United States Geological Survey base from which ... map was taken is on a polyconic projection. Equal areas in different parts ... therefore not shown quite equal, the relative diminution from center to ... gradually increasing up to perhaps 6 or 8 per cent. In the present prelimina... stage of the study it has not seemed worth while to compute the correcti... attributable to each area. A cartographer interested in sufficient refinement ... of results can easily estimate these corrections. The planimeter results ... diminish in accuracy inversely to size of area measured. For California, there... fore, where tribal areas are unusually small, measurements were made on ... larger base map and converted back to the general scale by ratio multiplica... tion. A general check was also made of all areas whose measured size seemed ... to differ notably from that expectable by eye, through superposing transparen... paper ruled in millimeters and counting squares. As the base map was on a ... scale of 1:10,000,000, each square millimeter was the equivalent of 100 square ... kilometers, to which unit the planimeter was also read.

It seemed best to compute densities in terms of this same unit of 100 square ... kilometers. Square kilometers would throughout have yielded only a frac... tion of a person per unit. Square miles would not have been much better, be... sides necessitating recomputation with possibility of error. For American ... readers the unit of 100 square kilometers has the advantage that it nearly ... equals a standard United States surveyed township of 6 by 6 miles, 100 square ... kilometers being 38.51 square miles, or about 7 per cent more than a township. ... A density of 15 in the following lists is therefore about equal to 14 per town... ship—a difference usually much less than the probable error of accuracy. The ... township comparison may help make the results more vivid to those familiar ... with Caucasian land settlement in the United States.

Discussion of Mooney's Figures

Mooney's figures are probably mostly too high rather than too low, so far as ... they are in error. This is the opinion of Swanton, his posthumous editor. ... Mooney himself was apparently reducing estimates as his work progressed. ... Swanton mentions an earlier figure of 32,700 for New England as compared ... with the final one of 25,100.[7] For part of the Southeast, Swanton's independent ... computation is 44,385, Mooney's 62,400.[8] Mooney allows 33,800 Pueblos, Kid... der 20,000.[9] Following are some comments of my own, prevalently in the same ... direction.

[7] C. C. Willoughby, Antiquities of the New England Indians, PM–P, 1935, estimates ... 24,000 for the beginning of the seventeenth century.

[8] Mooney, p. 9.

[9] Southwestern Archaeology, 39, 1924. "About 20,000" in some seventy towns at the time ... of the Spanish conquest.

Mooney gives my Algonkin Massachuset division 13,600 souls, the combined Abnaki, ... Pennacook, Nipmuc, Pequot, Wappinger, and Mahican, 18,300: in other words, nearly as many Indians in eastern Massachusetts and Rhode Island as in all the rest of New England ... plus adjacent parts of New York and New Brunswick;[10] which seems somewhat extreme, although in accord with the tendency toward heavier population on favorable shore lines.

The Montauk or Long Island tribes at 6000 also seem high.

Among the northern Iroquoian tribes, the Iroquois proper are put disproportionately low, perhaps under the influence of Hewitt, who seems to have been impressed by the humble beginnings of the great confederacy. The figures are: Huron and Tionontati, 18,000; Neutral, 10,000; Conestoga, 5000; Iroquois, 5500. This is but a little more than a thousand each for the five Iroquois tribes in 1600.

In the Southeast, the Creek (including the later Seminole) are allotted 18,000 in 1650, the Chickasaw 7000. Swanton's figures are 7000 and 3000–3500. Mooney was probably impressed by the importance of these groups in the period of relations with the English, when the Creek especially had become residuary legatees of moribund tribes; and he projected their importance and size backward. For the Choctaw, Mooney and Swanton agree on 15,000, which in view of their territory seems a fairly high figure.

In the Plains, Mooney's figures for 1780 appear on the whole well proportioned, though the following may be queried: 35,000 Dakota and Assiniboin; Atsina and Arapaho equal with 3000 each; Pawnee 10,000 against all southern Caddoans 13,400.

The Southwest, in which Mooney lacked the experience of intensive work, is more questionable. For 1680 he posits 8000 Navaho, but only 7000 for all Apache groups combined, including the Mescalero and Lipan as of 1750. This is surely a backward projection of recent conditions. As late as the end of the eighteenth century the Spaniards considered the Navaho an Apache subdivision, and by no means the outstanding one. In 1680, and still more in 1580, they are likely to have constituted a third, fourth, or fifth of the Apache total rather than a majority.

Mooney segregates his 33,800 Pueblos into 24,500 of Tanoan stock, 9300 Keres, Zuñi, and Hopi. Among the Tanoans, he allots 9000 to the southern or Piro division, 15,500 to the other divisions. Geographically, he puts 27,000 along the Rio Grande, 6800 west thereof, that is, in Hopi, Zuñi, Acoma, Laguna. This seems an overbalancing against modern conditions. The Rio Grande region, and especially its southern part, undoubtedly declined more than the western Pueblos; but perhaps not so much as he estimates.

Farther west, the Yavapai are given 600, five Yuman tribes on the Colorado 11,000.[11] The fact of disproportion is justly conceived but probably exaggerated. On the basis of Walapai Havasupai data, the Yavapai numbers might perhaps be doubled.

Fifteen thousand for the Coahuiltec bands surely is excessive, in view of their not farming and the nature of the country.

In the Oregon-Washington region, the Salish seem underweighted as against the Sahaptin and Chinook. Thus, United States Salish on coast, 6200; on Puget Sound, 6800; in the interior, including Idaho and Montana, 8700; total, 21,700; Sahaptin, 18,100; Chinook, 22,000; Yaquina, Alsea, Siuslaw, Kus, 8000. The definitely greater heaviness of population on the lower Columbia is indubitable, but perhaps not quite to the degree implied. Also, the Sahaptin, with a smaller territory, are given more than twice the population of the interior Salish in the United States.

In British Columbia, on the contrary, the Salish are favored: on the coast, including 1400 Bella Coola, 21,900; in the interior, 16,500; total, 38,400; all Nutka, Kwakiutl, Tsimshian, Haida, 30,000. This makes 20,500 coast Salish in modern British territory fronting on the Gulf of Georgia, as against only 31,400 population on all the remainder of the coast of British Columbia. Such a distribution would expectably have produced some superior florescence of culture on the Gulf of Georgia. However, as discussed below, Mooney's esti-

[10] Willoughby also cites eastern Mass., R. I., Conn., as the most heavily populated.

[11] The Cocopa are omitted, presumably as Mexican. The Yuma also are not mentioned. They may be intended by the "Cajuenche"—really the Kohuana, but perhaps interpreted as a variant form of Kuchan, the native name of the Yuma.

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etty consistently put the great densities in the southern half of the N
ich is not incompatible with the view developed above of a relatively recent
ward shift of the climax of this culture.

y's 73,700 for the Eskimo proper without the Siberian Yuit, and 16,000
m somewhat high.[12] They make the stock the second largest north of Mexico
. Mooney puts 6000 in the islands west of Baffinland, which were uninhab
roups of the mainland tribes to the south. He allows 40,000 for the Alaska
of the Aleut. He gives detailed data for the modern distribution, only,
he tribal figures entered in my table are computed from his decrease ra
as reapplied to smaller groups. At that, numbers for single groups lik
gmiut and 8800 Kaniagmiut seem high as compared to 10,000 Tlingit.

all, however, Mooney's estimates and computations have clearly
the basis of wide reading, conscientiousness, and experienced
ntil some new, equally systematic, and detailed survey is mad
st to accept his figures in toto[13] rather than to patch them here
y impression is that Mooney's total of about 1,150,000, reduce
) by the California substitution, will ultimately shrink to arou
possibly somewhat farther, but that the respective density rati
ipal areas will not be very materially affected by the change.
tral and southern Mexico, population is unanimously admitte
much heavier than in the United States and Canada combined.
ately there are no systematic group-by-group estimates south of
de, and anything like even approximately reliable density mapp
mpossible.

Population and Density by Tribes

table 7 is a conversion of Mooney's estimates into terms of my tri
uped according to cultural areas. The totals for each area will
able 8. Map 18 shows the densities by areas.

TABLE 7

ibal Populations (after Mooney), Territorial Extent, and Densities North of Mexico

(Totals for areas are given in table 8)

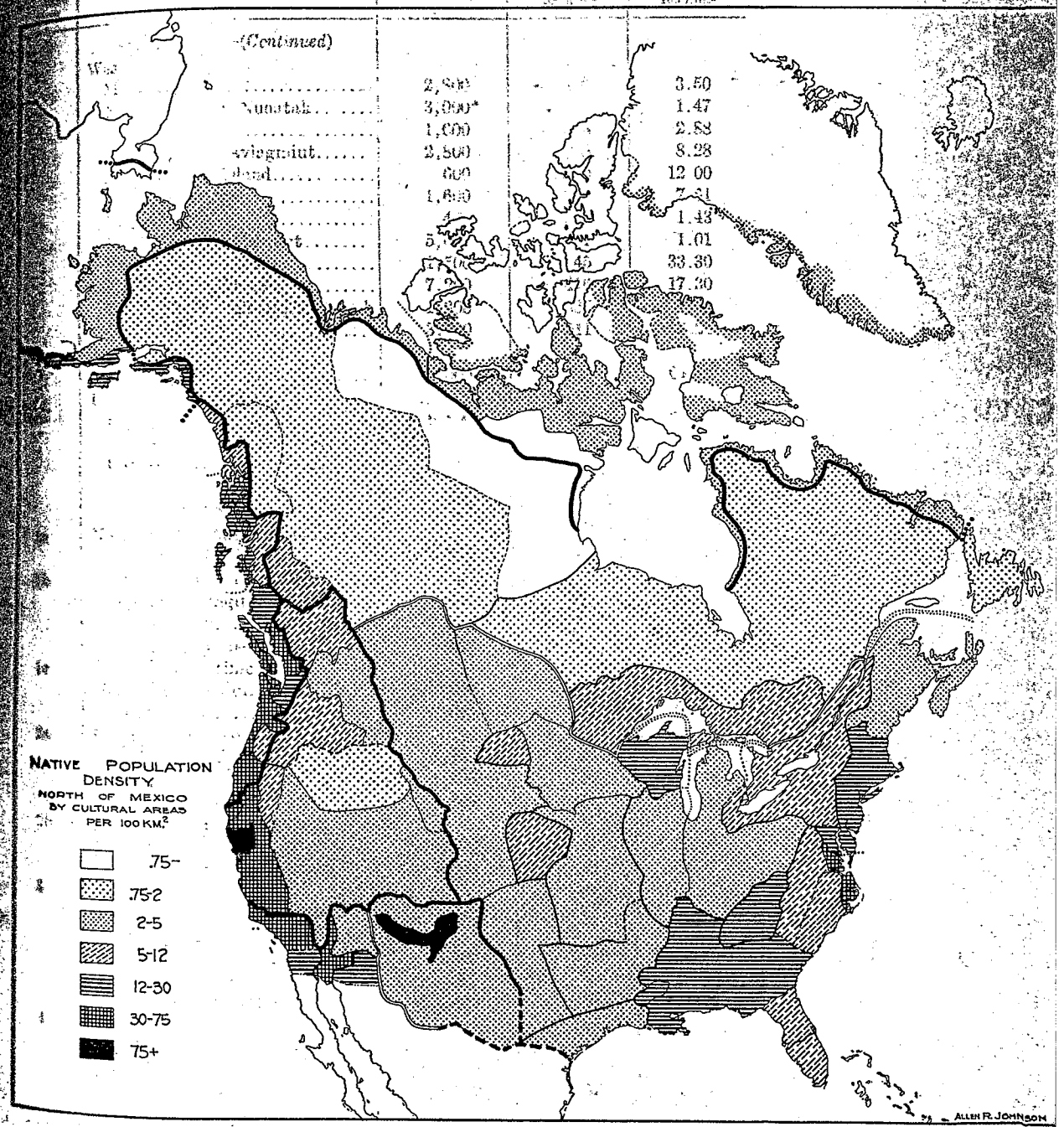
Tribes	Population	Area in 100 km.²	Density per 100 km.²
ARCTIC COAST			
ntral-Eastern Eskimo			
Greenland	10,000	1,575	6.34
Labrador	3,600	2,077	1.73
Baffinland	6,000	3,706	1.62
West of Baffinland, islands (*sic*)	6,000		
Aivilik, Iglulik, Netsilik	2,300	4,159	0.55
Copper Eskimo	2,000	1,607	1.24
Southampton Island	300	233	1.28
rren Ground Eskimo			
Caribou Eskimo	700	1,700	0.41

e Eskimo Tribes (Meddelelser om Grönland, 11), 1:32–34, 1887, compu
Eskimo excluding Aleut; presumably about the time of writing.
xcepting California, where he does not deal with separate tribes or groups.

(*Table 7 continued on pages 135 to 141.*)

TABLE 7-- (*Continued*)

	Population	Area in 100 km.²	Density per 100 km.²
(*Continued*)			
[illegible]	2,500		3.50
Nunatak	3,000*		1.47
[illegible]	1,000		2.88
[illegible]viegmiut	2,500		8.28
[illegible]dad	600		12.00
[illegible]	1,600		7.41
[illegible]	[illegible]		1.43
[illegible]t	5,[illegible]		1.01
[illegible]	[illegible]		33.30
[illegible]	7,0[illegible]		17.20
[illegible]	[illegible]		[illegible]



Map 18. Native Population Densities by Cultural Areas. Compare maps 6 and 28.

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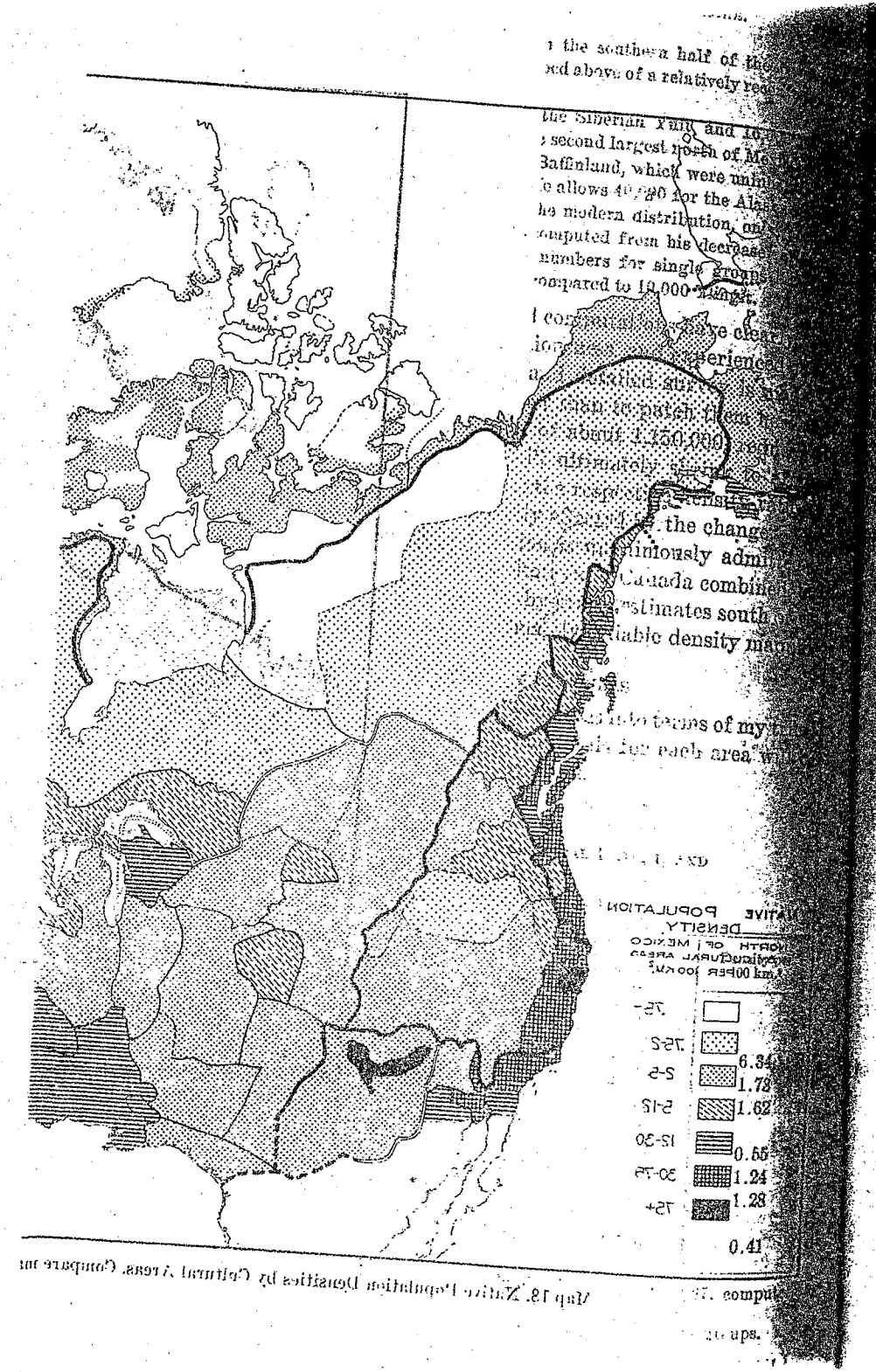

TABLE 7—(*Continued*)

	Tribes	Population	Area in 100 km.²	Density per 100 km.²
	ARCTIC COAST—(*Continued*)			
	Western Eskimo			
	Mackenzie	2,800	800	3.50
	Nuwuk, Kopak, Nunatak	3,000*	2,036	1.47
	Malemiut	1,600	555	2.88
	Kinugumiut, Kaviagmiut	2,800	338	8.28
	St. Lawrence Island	600	50	12.00
	Unaligmiut	1,600	210	7.61
	Ikogmiut	400	278	1.43
	Magemiut, Kaialigmiut	5,000	491	1.01
	Nunivagmiut	1,500	45	33.30
	Kuskokwagmiut	7,200	416	17.30
	Togiagamiut, Chingik, Nushagak	1,300	665	1.95
	Ogulmiut	3,700	511	7.24
5b	Aleut			
	Aleut	16,000	247	64.70
5a	Pacific Coast Eskimo			
	Kaniagmiut	8,800	287	30.60
	Chugachigmiut	1,700	262	6.48
	Ugalakmiut	800	40	20.00
	NORTHWEST COAST			
1a	Northern Maritime Mainland			
	Northern Tlingit	2,500	250	10.00
1b	Northern Maritime Archipelago			
	Southern Tlingit	7,500	742	10.10
	Haida	9,800	103	95.10
	Tsimshian proper	3,500	110	31.80
1c	Northern Maritime River			
	Niska, Gitskyan	3,500	381	9.18
	Haisla	1,300	80	16.20
2a	Central Maritime, Northern			
	Heiltsuk	1,400	80	17.50
	Bella Coola	1,400	150	9.33
	Kwakiutl	4,500	211	21.30
2b	Central Maritime, Southern			
	Nutka	6,000	91	65.90
	Makah, Quileute, Quinault	4,000	62	64.50
3	Gulf of Georgia			
	Comox, Pentlatch, Cowlitz, Lkungen, Seshelt, Squamish, Lower Fraser	20,500	607	33.70
	Nutsak, Lummi	800	60	13.30
	Klallam, Chimakum	2,400	58	41.30
4	Puget Sound			
	Skokomish, Nisqualli, Twana, Puyallup, Snoqualmi, Snohomish, Skagit	6,000	357	16.80

* From here on Mooney gives only three Eskimo aggregates, of 8000, 17,000, and 15,000, for 1740; besides 16,000 Aleut. His total of 40,000 has been allotted according to his tribal figures for survivors in 1900.

TABLE 7—(*Continued*)

Culture areas	Tribes	Population	Area in 100 km.²	Density per 100 km.²
	NORTHWEST COAST—(*Continued*)			
5	Lower Columbia			
	Tlatskanai	1,600	27	59.20
	Lower, Upper Chehalis, Owilapsh, Cowlitz	1,200	182	6.59
	Chinook	22,000	148	148.60
	Tillamook	1,500	67	22.30
	Yaquina, Alsea, Siuslaw	6,000	83	72.20
6	Willamette Valley			
	Kalapuya	3,000	334	8.98
7	Lower Klamath			
	Southwestern Oregon Athabascans 1–8	8,800	184	47.80
	Kus	2,000	20	100.00
	Takelma	500	70	7.12
	Tolowa (Cal. Ath. 1)	1,000	21	47.60
	Hupa, Chilula (Cal. Ath. 2)	1,500	18	83.30
	Yurok	2,500	19	131.00
	Karok	1,500	32	46.80
	Wiyot	1,000	13	76.90
	SOUTHWEST			
	I. *Pueblo Sphere*			
1	Pueblo			
	Hopi	2,800	70	40.00
	Zuñi	2,500	114	21.90
	Keres	4,000	120	33.30
	Piro	9,000	85	105.80
	Tano, Tewa, Tiwa, Pecos, Jemez	15,500	57	271.90
2a	Inter-Pueblo			
	Navaho	8,000	842	9.50
2b	Circum-Pueblo			
	Western, Eastern, Jicarilla Apache, incl. Mex.	6,500	5,588	1.16
	II. *Sonora-Gila-Yuma Sphere*			
3	Fuerte-Yaqui Lowland			
	Yaqui, Mayo, and other Cáhita		(481†)	
4	Sonora			
	Opata, Pima in Mexico		(847†)	
	Papago, Mexico and U. S.	6,600	714	9.24
	Gila Pima	4,000	150	26.60
5	Northern Sierra Madre			
	Tarahumar		(715†)	
6	Sonora Coast			
	Seri, Guaymas, etc.		(306†)	
7	Northwest Arizona			
	Walapai, Havasupai	1,000	261	3.83
	Yavapai	600	405	1.48

† Areas in Mexico. Mentioned here only to leave the list of Southwest areas complete. Not considered by Mooney.

TABLE 7—(*Continued*)

Culture areas	Tribes	Population	Area in 100 km.²	Density per 100 km.²
	SOUTHWEST—(*Continued*)			
	Lower Colorado River			
	Mohave, Halchidhoma, Yuma, Halyikwamai, Kohuana, Cocopa, incl. Mex.	11,000	361	30.40
	Maricopa	2,000	55	36.30
	Peninsular California			
	E, W Diegueño, Kamia, in U. S.	3,000	166	18.10
	Dieg., Kamia in Mex., Akwa'ala, Kiliwa, Cochimí, Waicura, Pericú		(1,224†)	
	Southern California			
	Desert, Mountain, Pass Cahuilla	2,500	63	39.60
	Serrano 1–4	3,500	293	11.90
	Luiseño, Juaneño, Cupeño	5,500	81	67.90
	Gabrielino	5,000	77	64.90
	Chumash	10,000	169	59.10
	INTERMEDIATE AND INTERMOUNTAIN AREAS			
1a	Great Basin			
	Ute, Gosiute	4,500	2,917	1.54
	Shoshone, W Shoshone, N Paiute, S Paiute	7,500	3,062	2.45
	Chemehuevi	500	452	1.10
	Panamint	500	236	2.11
	Eastern Mono	2,000	144	13.80
	Washo	1,000	62	16.10
1b	Snake-Salmon Drainage			
	Bannock, N Paiute, Shoshone	3,000	2,886	1.04
1c	Klamath Lakes-Pit River			
	Klamath, Modoc	1,200	249	4.81
	Achomawi, Atsugewi	3,000	171	17.50
	Mountain Maidu	1,000	81	12.30
1d	Wind River			
	Wind River Shoshone	2,500	550	4.54
2a	California			
	Kato (=Athabascan 7)	500	6	83.30
	Yuki, Coast Yuki	3,000	44	68.10
	Wintu in Sacramento drainage	2,000	51	39.20
	Wintun	2,500	74	33.70
	Yana	1,500	48	31.30
	Foothill Maidu (incl. Nisenan)	4,000	138	28.90
	Plains and Foothill Miwok (1–4)	9,000	190	47.30
	Costano, Esselen	7,500	163	46.00
	Salinan	3,000	94	31.90
	Valley Yokuts	11,000	382	28.70
	Foothill Yokuts	7,000	65	107.60
	Western Mono	2,000	96	20.80
	Tübatulabal	1,000	58	17.20
	Kawaiisu	500	42	11.90

† Areas in Mexico. Mentioned here only to leave the list of Southwest areas complete. Not considered by Mooney.

TABLE 7—(*Continued*)

Culture areas	Tribes	Population	Area in 100 km.²	Density per 100 km.²
	INTERMEDIATE AND INTERMOUNTAIN AREAS—(*Continued*)			
2b	California Climax			
	Pomo	8,000	88	90.90
	Coast, Lake Miwok (5-6), Wappo	3,000	47	63.80
	Patwin	6,000	96	62.50
	Valley Maidu (incl. Nisenan)	4,000	49	81.60
2c	California-Northwest Transition			
	Nongatl, Mattole, Lassik-Wailaki, Sinkyone (Athab. 3-6)	4,000	71	56.40
	Shasta 1-4, Chimariko	3,000	88	34.10
	Wintu in Trinity drainage	1,500	51	29.40
3a	Middle Columbia			
	Klikitat, Yakima, Wanapum, Palus	11,200	390	28.70
	Nez Percé	4,000	450	8.88
	Tenino, Umatilla, Walla Walla	2,900	642	4.51
	Wailatpu	500	93	5.37
	Wenatchi, Sinkiuse, Peskwaus, Methow, Nespilim, Sanpoil, Colville, Spokane (part)	3,500	313	11.20
3b	Upper Columbia			
	Wenatchi-Spokane group (part)	2,400	208	11.50
	Kalispel, C.d'A., P.d'O., Flathead	2,800	1,861	1.50
	Okanagan, Lake	2,200	410	5.36
	Kootenay	1,200	595	2.01
3c	Fraser			
	Chilcotin	2,500	197	12.60
	Lillooet	4,000	170	23.50
	Thompson, Nicola	5,150	155	33.20
	Shuswap	5,300	1,176	4.50
	EAST AND NORTH			
	I. *East*			
1a	Southeast			
	Stono, Edisto, Cusabo, Yamasi, Guale	4,400	113	38.90
	Apalachi, Ap'ola, Chatot, Sawokli, Pawokti, Pensacola	12,000	614	19.50
	Mobile	2,000	100	20.00
	Creek	18,000	1,476	12.20
	Yuchi	1,500	130	11.50
	Eastern Shawnee	1,000	78	12.80
	Chickasaw	8,000	866	9.23
	Choctaw	15,000	683	21.90
	Tunica, Ofo	2,000	206	9.70
	Ibitupa, Chakchiuma, Taposa	1,200	266	4.51
	Biloxi, Pascagula	1,000	88	11.30
	Houma, Acolapisa, Washa, Chawasha, Tangipahoa, Bayogula, Kinipisa, Okelusa	5,400	314	17.10
	Chitimacha	3,000	94	31.90

TABLE 7—(*Continued*)

Culture areas	Tribes	Population	Area in 100 km.²	Density per 100 km.²
	EAST AND NORTH—(*Continued*)			
1b	Southeast Climax			
	Natchez, Avoyel, Taensa	5,300	277	19.10
1c	North Florida			
	Timucua	8,000	678	11.70
2	South Florida			
	Calusa	3,000	247	12.10
	Ais, Jeaga, Guacara, Tekesta	1,000	295	3.38
3	(Northwest Gulf Coast) South Texas			
	Atakapa	1,500	482	3.11
	Karankawa	2,800	282	9.92
	Tonkawa	1,600	313	5.11
	Lipan Apache	500	980	0.51
4a	Red River			
	Caddo, Wichita, Kichai, Waco, Tawakoni	13,400	2,577	5.19
	Quapaw	2,500	680	3.67
4b	Middle Platte			
	Pawnee	10,000	1,306	7.66
5a	Southern Plains			
	Kiowa, Kiowa-Apache	2,300	1,682	1.36
	Comanche	7,000	1,400	5.00
5b	Northern Plains			
	Cheyenne, Arapaho	6,500	2,111	3.07
	Teton Dakota	10,000	1,700	5.88
	Crow	4,000	1,527	2.61
	Assiniboin (part)	2,000	343	5.83
	Atsina	3,000	814	3.68
	Blackfoot, Blood, Piegan	15,000	3,464	4.33
	Sarsi	700	937	.75
6a	Southern Prairie			
	Osage	6,200	2,260	2.74
	Kansas	3,000	499	6.01
	Oto	900	219	4.10
	Missouri	1,000	552	1.81
	Iowa	1,200	859	1.39
	Omaha, Ponca	3,600	300	12.00
6b	Central Prairie			
	Santee, Yankton, Yanktonai Dakota	15,000	2,996	5.01
6c	Village Prairie			
	Mandan, Hidatsa	6,100	225	27.10
	Arikara	3,000	374	8.02
6d	Northern (Canadian) Prairie			
	Plains Cree	3,000	1,567	1.91
	Plains Ojibwa	2,000	470	4.25
	Assiniboin (part)	8,000	1,371	5.84

TABLE 7—(*Continued*)

Culture areas	Tribes	Population	Area in 100 km.²	Density per 100 km.²
	EAST AND NORTH—(*Continued*)			
7	Wisconsin			
	Winnebago	3,800	139	27.30
	Kickapoo	2,000	155	12.90
	Sauk and Fox	6,500	312	20.80
	Menomini	3,000	255	11.70
	Ojibwa (part)	3,000	600	5.00
8a	Ohio Valley			
	Miami	4,500	1,242	3.63
	Shawnee (western)	2,000	1,100	1.82
	Potawatomi	4,000	919	4.35
	Uninhabited		1,381	
8b	Illinois			
	Illinois	9,500	3,065	3.09
9	Lower Great Lakes			
	Mohawk, Oneida, Onondaga, Cayuga, Seneca	5,500	734	7.49
	Conestoga	5,000	702	7.12
	Erie	4,000	1,001	3.99
	Neutral	10,000	592	16.80
	Huron, Tionontati	18,000	1,392	12.90
10	North Atlantic Slope			
	Micmac	3,500	1,508	2.32
	Abnaki	3,800	1,777	2.14
11	Middle Atlantic Slope			
	Pennacook	2,000	267	7.49
	Nipmuc	1,700	125	13.60
	Massachuset	13,600	129	105.40
	Pequot	2,200	29	75.80
	Wappinger	5,600	192	29.10
	Montauk	6,000	38	157.80
	Mahican	3,000	271	11.10
	Delaware	8,000	454	17.60
	Nanticoke	2,000	122	16.30
	Conoy	2,700	201	13.40
12a, b	South Atlantic Slope, Piedmont and Lowland			
	Monacan, Manahoac, Mohetan	2,700	311	8.68
	Nottoway, Meherrin	2,200	96	22.90
	Coree	1,000	30	33.30
	Tuscarora	5,000	95	52.60
	Occaneechi, Woccon, Sara, Catawba, Eno, Cape Fear, Pedee, Sewee, Santee, Congaree, Wateree, Tutelo, Saponi	17,500	1,561	11.20
12c	South Atlantic Slope, Carolina Sound			
	Weapemeoc, Secotan, Pamlico	4,500	140	32.10

TABLE 7—(*Concluded*)

Culture areas	Tribes	Population	Area in 100 km.²	Density per 100 km.²
	EAST AND NORTH—(*Continued*)			
12d	South Atlantic Slope, Virginia Tidewater			
	Powhatan	9,000	234	38.40
13	Appalachian Summit			
	Cherokee	22,000	1,344	16.30
	II. *North*			
14	Northern Great Lakes			
	Algonkin, Ottawa	7,300	2,043	3.57
	Ojibwa (other than in 6d and 7)	30,000	3,145	9.54
15	Eastern Subarctic			
	Beothuk	500	1,242	0.40
	Montagnais, Naskapi, Tête de Boule	5,500	12,550	0.44
	Cree (except Plains Cree in 6d)	17,000	11,885	1.43
16a	Western Subarctic			
	Chipewyan	2,250	6,194	0.36
	Beaver	1,250	524	2.38
	Slave	1,250	892	1.40
	Dogrib	1,250	1,418	0.88
	Abbato-tine, Etchao-tine, Strongbow	1,200	3,254	0.37
	Sekani	3,200	3,218	0.99
	Kaska	500	500	1.00
	Kutchin tribes in Canada (4 plus 4 part)	3,000	2,861	1.04
	Kutchin tribes in Alaska (3 plus 4 part)	1,600	2,464	0.65
	4 Khotana tribes, Kalchana	4,500	4,750	0.94
	Ahtena	500	621	0.81
16b	Interior Tundra			
	Hare	750	2,261	0.33
	Yellowknife	430	2,110	0.20
	Chipewyan territory		750	
	Caribou-eater	1,250	3,860	0.32
16c	Upper Fraser			
	Carrier, Babine	8,500	1,125	7.56
16d	Northern Plateau Apex			
	Tahltan, Taku-tine	2,500	2,142	1.16
	MEXICO AND CENTRAL AMERICA			
	Culture areas are given in table 11. Populations are not considered by Mooney, except Coahuiltec 15,000 (in U. S. ?)			

Population and Density by Areas

I give in table 8 the population, size, and population density of each numbered cultural area, such as the Southeast, South Atlantic Slope, Prairies, Great Basin, California, with its lettered subareas merged in it.

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TABLE 8

POPULATION DENSITIES OF PRINCIPAL AREAS OF CULTURE

	Culture areas	Population	Area in 100 km.²	Density in 100 km.²
	Arctic Coast			
1	Eastern Eskimo	30,900	15,057	2.05
2	Western Eskimo	58,800	7,231	8.15
	Northwest Coast			
1	Northern Maritime	28,100	1,666	16.80
2	Central Maritime	17,300	594	29.10
3	Gulf of Georgia	23,700	725	32.60
4	Puget Sound	6,000	357	16.80
5	Lower Columbia	32,300	507	63.70
6	Willamette Valley	3,000	334	8.98
7	Lower Klamath	18,800	377	49.80
	Intermediate and Intermountain			
1	Great Basin	26,700	10,810	2.47
2	California	84,000	1,941	43.30
3	Columbia-Fraser	47,650	6,660	7.15
	Southwest			
1	Pueblo	33,800	446	75.70
2	Circum-Pueblo (Athab.)	14,500	6,430	2.26
4	Sonora (in U. S.)	10,600	864	12.20
7	Northwestern Arizona	1,600	666	2.40
8	Lower Colorado River	13,000	416	31.25
9	Peninsular Calif. (in U. S.)	3,000	166	18.10
10	Southern California	26,500	683	38.70
	Eastern			
1	Southeast	87,800	5,983	14.70
2	South Florida	4,000	542	7.38
3	South Texas	6,400	2,057	3.11
4	Red River (and Pawnee)	25,900	4,563	5.67
5	Plains	50,500	13,978	3.61
6	Prairies	53,000	11,692	4.53
7	Wisconsin	18,300	1,461	12.52
8	Ohio Valley	20,000	7,707	2.59
9	Southern Great Lakes	42,500	4,421	9.61
10	North Atlantic Slope	7,300	3,285	2.22
11	Middle Atlantic Slope	46,800	1,828	25.60
12	South Atlantic Slope	41,900	2,467	17.00
13	Appalachian Summit	22,000	1,344	16.30
	Northern			
14	Northern Great Lakes	37,300	5,188	7.18
15	Eastern Subarctic (Algonkin)	23,000	25,677	1.11
16	Western Subarctic (Athab.)	33,930	38,944	0.87

Condensing still farther, into grand areas, we have the densities shown in table 9. The areas are arranged not geographically but in order of density. I have added in parentheses the three main subunits of the Intermediate-Intermountain area, because these are so diverse that the density of the whole area is only a statistical mean. For the same reason I have given the Eastern and Northern areas separately, though adding in parentheses their joint mean.

TABLE 9

POPULATION DENSITIES BY MAJOR AREAS

Culture areas	Population	Area in 100 km.²	Density in 100 km.²
(California	84,000	1,941	43.30)
Northwest Coast	129,200	4,560	28.30
Southwest (in U. S.)	103,000	9,671	10.70
Intermediate-Intermountain	158,350	19,411	8.10
(Columbia-Fraser	47,650	6,660	7.15)
Eastern	426,400	61,328	6.95
Arctic Coast	89,700	22,288	4.02
(East and North	520,630	131,137	3.97)
(Great Basin	26,700	10,810	2.47)
Northern	94,230	69,809	1.35
Total, north of Mexico*	1,000,880	187,067	5.35

* Coahuiltec in the United States are omitted, Apache and Papago in Mexico included.

The outstanding fact is the exceptional density on the Pacific coast—both Northwest and California. Next comes the Southwest, which extends to the Pacific coast. Even the Columbia-Fraser region, a Pacific Coast hinterland, more than holds its own against the fertile East. The Arctic coast, surprisingly enough, has a density more than half as great as that of the East, though this was mostly agricultural; and one approximately equal—on the face of the figures even slightly superior—to the agricultural Eastern and nonagricultural Northern areas combined. This means, of course, that the latter had much the lowest density of all. The figure for the continent, north of Mexico, falls somewhat below that for the agricultural East and somewhat above that for the Eskimo.

Coast Land and Farm Land

Two generalizations are obvious: coastal residence did make for heavier population; agriculture did not by itself necessarily increase density. Before these propositions are analyzed more in detail with regard to their meaning, it seems worth while to express them in still more drastic figures.

We can first set off the wholly nonagricultural Pacific coast; next, the essentially agricultural areas of the Southwest and East; and then treat the remainder of the continent north of Mexico as a unit.

The Pacific coast may be conveniently taken as extending from the Malemiut Eskimo of Alaska to the Diegueño and Kamia just short of the mouth of the